NEW REMEDIES.

THERAPEUTICS.

ON THE TREATMENT OF UTERINE FIBROMA AND MYOMA BY HYPODERMIC INJECTIONS OF ERGOTINE.

Professor Hildebrandt, in the *Beiträge zur Geburtshülfe und Gynaekologie*, Band iii. Heft 2, 1874, remarks that recent literature has been lately very full of repeated trials of hypodermic injections of ergotine for the treatment of uterine tumors. As a rule, the result has not been favorable. Failure seems to have arisen chiefly from three causes: the extreme pain endured by the patient; phlegmonous inflammations and abscesses; and, in one case, poisoning. The strongest argument that has been used against it is, that those who have the hardihood to go through all the suffering have derived no benefit whatever. As to Dr. Hildebrandt himself, his experience has differed in nowise from that previously reported (*Berliner klinische Wochenschrift*, No. 25, 1872), and he is perfectly satisfied with the results, which go to substantiate his previous assertions.

First objection: *Pain.*—The solution of ergotine now employed has 13 parts of water to 3 of the extract ergot, and 2 of glycerine. It causes less pain than when the quantities of water and glycerine are equal. The glycerine is added to prevent the formation of fungi. With this preparation, the pain is not greater than that usually experienced with the injection of quinine. The first applications are the most painful; the region of Poupart's ligament is the most sensitive spot, and that of the umbilicus the least so. There are two distinct varieties

of pain; the first an immediate one, the effect of irritation to the cellular tissue, lasting a couple of hours; the second coming on later, and continuing for about an equal time, arising from contraction of the uterus. The latter kind of pain is essential to the success of the operation; the more severe it is the more likely the desired effect will be obtained. Wernich's solution produces this pain also. The more deeply the needle is driven, the less intense is the first variety of pain.

Second objection: *Phlegmonous inflammation and abscesses.* Dr. Hildebrandt has never seen these accidents follow his own injections, and only twice where his assistants had operated; and this out of over one thousand hypodermic injections. These complications are believed to depend upon not inserting the needle deep enough; he passes the canula at least two-thirds of its depth, and does not mind injecting the fluid into the muscular tissues. The skin and its mediate superficial layer of cellular tissue should be thoroughly cleared. The experience of Langenbeck, Awater, and Löhlein coincides with his own, both as to this method of diminishing the pain, and obviating the occurrence of abscesses.

Kleinwächter's case of *poisoning* arose from the solution being too strong, three and a half parts nearly of ergotine to two of water and two of glycerine. The symptoms were analogous to those of morphia-poisoning: "deep stupor, reduction of temperature, pulse 140."

Against the negative results of other investigators he places the positive benefits obtained, as observed by Hermanides, Eggel, Bengelsdorf, Cl. Mayer, Keating, Hening, and Wernich; the latter having seen the treatment check hemorrhage in the majority of cases, even after five or six injections, where it had been used solely for that object. Scanzoni writes him privately under date of March 30, 1874, that he is, as a whole, completely satisfied with his results, although he cannot flatter himself with ever having seen the entire disappearance of the tumor. He has used it in seventeen cases of large and small fibromata, the injections being persevered in for months. In one instance, a tumor midway between the navel and pubes diminished to the size of an orange after forty injections. In a case of flooding from fibroma, it was arrested after the seventh injection. Dr. Burow writes privately to say, that in one case a fibroid of the size of a child's head was reduced in three months to the size of an orange, with complete cessation of menorrhagia.

Dr. Hildebrandt now gives sixteen fresh cases, which occurred either in his own practice or under his immediate supervision, and divides them into three classes:—1. Removal of the symptoms, with reduction of the tumor. 2. Marked improvement of the symptoms, with slight reduction of the tumor (these were partly his own and

partly others). 3. No effect either on the symptoms or on the tumors.

I. *Removal of the Symptoms, with Reduction of the Tumor.*—In the first division there are five cases, in women respectively of the ages of forty-three, thirty-four, twenty-eight (single), thirty-seven, and thirty-six years. In the first case, the tumor reached to the umbilicus; the uterus was moderately thickened and elastic. At the end of fifty injections, during two months, the tumor had receded to about the size of a three months' gravid uterus. In the second case, the fibroma, about the size of a man's fist, was felt to be in the right side of the abdomen. With fifty-five injections, during three months, the tumor had ceased to be felt through the abdominal parietes. The small subperitoneal tumors which were noted before the operation were in nowise affected, except being more prominently felt. In the third case, that of a single woman, the tumor was nearly up to the navel; it was elastic, and distinctly demarcated from the surrounding organs. Twenty-six injections, during two months, diminished the tumor so much that its apex could be felt on a level with the pubes. At the request of the woman, the treatment was not continued. In the fourth case, the uterus was deeper than normal in the pelvis; the intravaginal portion of the cervix was not altered; the uterus was about the size of an apple. The uterine sound passed in 9½ centimetres (about 3¾ inches). There was profuse menorrhagia. In less than two months, after sixty-two injections, the uterine sound passed in 7½ centimetres (about three inches), and the body of the uterus was about the usual size in a multipara. In the fifth case, the uterus was universally enlarged to about the size of a small apple, with a fibroma in the wall on the right side; menstruation was excessive. With fifty-five injections, at intervals of two or three days, only half of the amount of solution being employed at times on account of the pain, the uterus remained the same; but the tumor entirely disappeared. The tumor might have been only an exudation.

II. *Marked Improvement of the Symptoms, with Slight Reduction of the Tumor.*—Case 1. A woman (age not given) had menorrhagia of two and a half years' standing. The fundus of the uterus was about three finger-breadths above the pubes; a large fibroma was diagnosed on the right side of the uterus, extending into the cavity; it was firm and smooth on the surface. Sixty injections were made during nearly three months. At the end of the time the uterus was found to be on a level with the pubes, the menstruation had become normal, and the woman was able to move about again.

Case 2. The age of this patient is not given. The catamenia were regular as to time, but excessive in quantity and clotty. The uterus

was as large as at the fourth month of gestation, anteflexed, with a subperitoneal fibroma as big as an apple in the left and upper side; an intrauterine fibroma was also believed to exist. The uterus was firmly elastic. Fifteen injections were given, one every second day; the treatment could not be borne longer, on account of the suffering induced. Menstruation became normal.

Case 3. The patient, aged thirty-seven, had menorrhagia, with regularity, however, as to time. There were two uterine tumors; one subperitoneal, on the left side; the other, a larger one, intramural, in the posterior wall. Both were diagnosed as fibromyomata. Daily injections were used for a month, with an interval once of four days, from some phlegmonous inflammation showing itself around the seat of puncture. The next period was better, the tumor was slightly less, and perceptibly so; it was more readily felt, and more distinctly demarcated from its uterine parenchyma.

Case 4. In this woman, aged thirty-five, there had been excessive menorrhagia for the last two years. A large fibromyoma was distinctly defined, growing in the anterior wall, expanding the uterus above the pubes to about the size of the fifth month of gestation, at the same time descending deeply into the pelvis. Forty-seven injections were made in three months. The menses, which previously appeared every fourteen days, now had an interval of twenty-one and twenty-three days; their quantity was more normal, but they were still profuse. The uterus was a little smaller.

Case 5. In this patient, thirty-four years old, the catamenia appeared for the last twelve months every three weeks; they were excessive, with expulsion of clots. A fibroma about the size of a child's fist was diagnosed in the left wall of the uterus. Forty injections were made in three months. The fibroma became one-third smaller, the menses ceased, and pregnancy occurred, which pursued a normal course.

Case 6. A single woman, age not stated, had extremely profuse, painful menorrhagia every fourteen days, lasting eight or nine days. She had continued in this state for the last six years, and was extremely blanched. The uterus was anteflexed, broad, and extending a little above the pubes; the tumor had a firm consistence, with a smooth surface. Twenty-two injections were made during nearly two months. She became better in every respect; the catamenia appeared with an interval of twenty-nine days, continuing seven days. The injections were continued with good effect on the hemorrhage and benefit to the patient, without, however, producing any perceptible diminution of the tumor. This was in 1872. During the winter of 1873–74, in spite of the injections, the hemorrhage became freer, and for the time

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profuse. What was the exact cause of this return of hemorrhage the writer cannot say, but he thinks that the tumor (submucous?) might have descended, become seized in its downward course, which occasioned a temporary increase of bleeding.

Case 7. The patient was single, aged forty-seven. The uterus was the size of a man's head; menorrhagia was excessive, and she had leucorrhœa. Twelve injections were made. The menstruation was moderated, the periods being two days shorter. The tumor was unchanged; the fluor albus remained the same.

Case 8. This patient was aged thirty-five, with profuse menorrhagia every three weeks, of eight or ten days' duration. The fundus was felt midway between the navel and pubes; it was globular and firmly elastic. The cervix was patulous as far as the internal os. Twenty-five injections were made. The next period lasted nine days, but was moderate in quantity. The general condition was benefited. The uterus was two finger-breadths above the pubes.

Case 9. This woman was thirty-eight years of age; she had suffered from excessive menorrhagia for seven years. The last two years the menses had appeared every fourteen days, and there was a continuous intermediate sanguineous discharge. A slightly elastic tumor of the size of a fist was felt in the wall of the anteflexed uterus. After fourteen injections, menstruation became normal, for the first time for years. The tumor was somewhat smaller. Notwithstanding every precaution, phlegmon occurred twice in this case.

III. *No Effect on Symptoms or on Tumor.*—Case 1. The patient, thirty-seven years old, had a painful tumor on the right side of the abdomen. There was no leucorrhœa. Two tumors were found in the uterus; one, of the size of an apple, in the anterior vault of the vagina, connected with the anterior wall of the uterus; a second, somewhat smaller, in form like a normal uterus, seated on the right side of the walls of the uterus. Daily injections were made for fifteen days without producing the slightest alteration on the tumor. Case 2. The uterus was of the size of a man's head, with even surface and of hard consistence. There was profuse menorrhagia, with faintings. In Case 3, an old submucous fibroma was diagnosed; the patient derived not the slightest benefit from thirty injections.

Dr. Hildebrandt has again seen the first of his former published cases, after a lapse of two years. She came into the hospital with a five-months' child at the breast. He examined her, and found the uterus of normal size, without a trace of any abnormalities. In Case 5 of the same series the benefit continues, but the uterus is no smaller.

He believes it is essential, in order to obtain a successful result, that the tumor should be compressed by protracted contractions of the

uterine walls. As in neoplasms of other parts of the body, absorption can be produced by prolonged instrumental compression, so also may fibromyomata be reduced in size by similar compression by a tetanically contracted uterus. Whether the action of the ergot in causing contraction of the uterus, and thereby compressing the tumor, is the only way in which it operates, remains doubtful. In some cases he is under the undoubted impression that the tumors soften before they lessen. If this softening were always present, it might be explained by supposing that the tumors, through an excess of blood in the veins, and a diminution in the arteries, as seen by direct experiment of Wernich, were gradually disintegrated. He protests against having ever maintained or believed that every fibroma of the uterus was capable of dispersion by ergotine injections.

The consistence of the tumor is all-important. An old impoverished fibroma, consisting chiefly of thickened connective tissue, is as unlikely to be absorbed as a calcareous mass. If the ergot increase the hemorrhage and discharge, it is probable that it does so by the uterine contractions causing a narrowing of the vessels. This is generally found to be the case in aged persons, the reverse, however, with the young; with the latter the tumors are vascular and loose, with muscular fibres. The most favorable cases are those which resemble in form and consistence a tense elastic cyst, which was the case with his first published case.

Energetic uterine contractions are essential to success; hence the uterus must be healthy and capable of contraction. Thin muscular walls are less fitted, as seen in some subperitoneal and submucous fibromata of large size, where the uterine walls are much expanded. In the intermediate-sized tumors there is more risk of indurations and exudations into the parenchyma than there is from thinning. The cases the least suited are those where there have been some chronic parenchymatous metritis or perimetritis and parametritis. These conditions should be first cured before attempting injection of ergot. Lastly, the most favorable position is immediately under the mucous membrane—the muscular layer that covers it being perfect. In the middle of the uterine walls it is less favorable, but least of all when subperitoneal. In the latter kind of cases he has at times observed the tumor pushed out, and thereby rendered more prominent, by injections.

In order to promote rapid absorption of fibromyomata, the following conditions are essential:

1. Their seat should be submucous.
2. Their consistence should be of a tense, elastic, muscular character.
3. The uterine walls should be healthy, contractile, not thinned by

stretching, not unyielding by exudations, and the uterus free from perimetritis and parametritis.

He adds that whoever thinks he will cure the symptoms and remove the tumors by a few injections greatly errs. At least from twenty to fifty or more are absolutely necessary to obtain favorable results.—W. C. Grigg, M.D., in *London Med. Record.*

Ergotine in Croupous Pneumonia.—The well-known contractile influence of ergot upon the vessels—shown by the anæmia of the invisible mucous membranes—led Dr. Wycisk (*Allg. Med. Central-Zeitung*) to employ it in six cases of croupous pneumonia, and the results were very favorable. In one such case, with profuse serous and albuminous expectoration, the latter ceased entirely within two hours after the administration of the ergot of rye in powder, and the coarse rattling râles in both lungs gave way to the fine crepitation heard in the early stages of the disease. This effect lasted for two days, and at a second and even third return of the expectoration the ergot was administered with the same good results. None of the other five cases of pneumonia in which the ergot was employed terminated fatally, no residua was left in any; the effect of the ergot in all was to diminish the amount of the exudation and consequently the expectoration. The Doctor, however, would not advise the use of the ergot in large infiltrations, in emphysema, in cases of rupture of cerebral vessels, or in exhausted and decrepit individuals, as it might in such cases prove hazardous.

Active Principle of Ergot.—Prof. Levi, of the University of Pisa, has just made known, as the result of numerous analytical and experimental researches, that the physiological, therapeutical, and obstetric properties of ergot of rye are due to the presence of phosphoric acid, which it contains in abundance, much more than to its organic principles (like ergotine, ecbalin, etc.), to which until now had been exclusively ascribed all the various actions of the substance.—*Lancet*, Jan. 2, 1875.

Ergotine Hypodermically in Uterine Fibroids.—Hildebrandt, writing in the *Amer. Journ. Obstet.*, Feb., '75, says:—"If we review all these circumstances, we are already enabled, after the comparatively small number of observations, to accept the following points as conclusively established on the prognosis of the treatment and cure of uterine fibroids by the hypodermic injection of ergotine. This treatment is most likely to be attended by favorable results:

1. When the tumor is richly provided with muscular tissue and possesses the consistence and feel of a tense, elastic cyst.

2. When the tumor is submucous.

3. When the walls of the uterus are sound, capable of vigorous contraction, not too much attenuated by dilatation or stiffened by exudation in their substance, and when there is no para- or perimetritis present.

4. As soon as the chronic metritis and parametritis, which frequently accompany fibroid tumors, have been removed by proper preparatory treatment, when the previously mentioned conditions again come into force.

5. When the tumor is unprovided with a capsule and merges directly without a boundary into the peculiar tissue of the uterus, which anatomical relation of uterine fibroids may be considered most favorable to their complete cure by absorption.

THE ACTION OF CERTAIN DRUGS ON THE VESSELS OF THE BRAIN.

Dr. Schüller has lately made some observations on the changes in the condition of the vessels of the pia mater in rabbits which had been brought under the influence of certain drugs. By trephining the skull, and removing a piece of it about the size of a farthing, without injury to the dura mater, he could watch any alterations in the vascular supply of the brain with great facility and in the most direct manner. The sympathetic nerve, with its superior cervical ganglion, was generally removed on one side of the animal's neck. The drugs employed were nitrite of amyl, ergotine, opium and chloroform; and the effect of mustard plasters applied to the skin was also made the subject of experiment. It was found that small mustard plasters had no influence whatever on the vessels of the pia mater, whereas large ones regularly produced their dilatation, and this was again followed by alterations of calibre succeeding one another more or less rapidly, and finally by contraction, which often still persisted an hour and a half after the removal of the sinapism. Nitrite of amyl produced a very marked dilatation of the vessels of the pia mater extending to the arteries as well as to the veins. The same phenomenon was also observed on the side on which the sympathetic nerve had been removed, on which there was already distinct dilatation of the vessels owing to that operation, and it also occurred after section of the pneumogastric nerve, as well as in the animals which had been curarized.

The administration of ergotine is followed by a powerful and long-continued contraction of the vessels, which also involves the side of the brain on which the sympathetic is paralyzed. According to

Schüller, the action of ergotine is antagonistic to that of nitrite of amyl, and able to overcome the relaxed condition of the vessels produced by the latter. Opium appears always to dilate the vessels of the brain at first, while afterwards it makes them gradually contract. After the inhalation of chloroform the veins and arteries of the pia mater at first contract, but they very soon become relaxed, and considerable venous congestion follows. Dr. Schüller has made the interesting observation that nitrite of amyl not only quickly removes the effects of chloroform on the vessels of the pia mater, but in cases of advanced narcotism from the latter drug it rapidly relieves the dyspnœa and labored respiration, and renews the strength of the pulse, while at the same time it restores the animal's reflex excitability in an astonishingly short space of time. We are not aware whether nitrite of amyl has been tried in cases of danger from chloroform in man, but the above observation is worth remembering by those engaged in its administration, and it may possibly be the means of saving valuable lives.—*Med. Times and Gazette.*

SPLENIC LEUKÆMIA TREATED BY ERGOTINE HYPODERMICALLY.

Prof. DaCosta reports two cases of splenic leukæmia, in which very striking results followed the use of ergotine hypodermically. The treatment in one case is thus described: A hypodermic injection, on alternate days, of five grains of ergotine in glycerine and water, also internally twenty drops of chloride of iron thrice daily. The first injection was of one grain of ergotine; but the subsequent applications were of the strength prescribed above. The first two injections were made over the splenic region, the third injection and all the other ones were into the subcutaneous tissue of the left arm. On October 16th, after two injections had been made, the patient said that he felt better, and the splenic diameters were found to be less. An observation on the 20th, after five injections, records that the pupils are not dilated by ergotine; that there are no ulcers at former points of insertion, but in each case a trifling circumscribed slough of the skin. The temperature before the injection was 100·3°; after, the same. The temperature on several occasions showed a slight rise after the injection, but not more than half a degree. October 21st, after six injections, the patient enthusiastically volunteered the information that he felt splendidly, and the size of the spleen was observed to have much diminished. October 22d, after seven injections, the spleen was percussed and found not extending to the lower rim of

the ribs. Very marked improvement in the patient's appearance was manifest, and he said that he had not felt so well for a year. October 29th, after eight injections, the color of the face, lips, and tongue was almost normal, the appetite had greatly improved, the pain in the left side was gone. A microscopical examination of the blood, made by the first clinical assistant, Dr. James Wilson, showed the relative number of the white corpuscles to have become nearly normal, being fourteen in the patient's case as compared with twelve in the blood of a perfectly healthy person. Percussion of spleen gave a dulness of only three and three-fourth inches in the verticular diameter, the transverse diameter beginning on a line with the middle of the axilla; the temperature was normal. The patient was now dismissed as cured, after being enjoined to continue the use of the iron.—*Am. Practitioner*, from *Am. Jour. Med. Sciences.*

THE INSECTICIDAL PROPERTIES OF SOME SPECIES OF PYRETHRUM.

BY HERMANN KALBRUNER.

Some plants of the Composite family have long been used for the destruction of different kinds of insects. Thus, Mathiolus in his "Herbal" (A. D. 1563) says of the *Conyza media* (*Conyza squarroso*, L.) that the plant or the smoke of it will drive away fleas, gnats, and other noxious insects. The smell of *Inula Pulicaria* was held to be equally efficacious in dispersing insects, and the herb *Artemisia Absinthium* was used for similar purposes. In the Banat the root of *Inula Helenium*, L., has long been held in high esteem as a fumigant against mosquitoes, etc.

But in more recent times certain species of *Pyrethrum* have obtained considerable reputation as insecticides; *Pyrethrum carneum* and *P. roseum*, M. B., both growing wild, and frequently cultivated in the Caucasus, having, in this respect, proved to be very superior. In the year 1846, Zacherl, a Tiflis merchant, first introduced the sale of these flowers into Vienna under the name of "Persian Insect Powder."

Notwithstanding that *P. corneum* and *P. roseum* are indigenous in the Caucasus and in Persia, they have been successfully cultivated in many localities in Europe and North America. The climate of Lower Austria suits them very well; they are found there as ornamental plants in the gardens, and they grow in northerly cool places with especial luxuriance. The author has had plants of *P. roseum* in his

garden during several years, and they have supported the cold of winter without shelter.

Under the name of Dalmatian Insect Powder the flowers of *Pyrethrum cinerariafolium*, Trev., a plant that grows wild in Dalmatia, have been used. Through the kindness of a friend the author obtained some seeds from Dalmatia, from which he was successful in raising plants in his garden, where they lived through the winter in the open air.

In order to test the effect of the different insect powders the author sprinkled some flies with the powders, and took the length of time required to kill the flies as the measure of the value of the powders. When a house fly was placed in a small flask, sprinkled with four grains of insect powder, if the powder were very powerful, there was considerable stupor at the end of one minute, followed by death of the fly after two or three minutes. The commercial insect powders behaved differently in this respect; some of them corresponding completely to the above standard, whilst others, although they quickly stupefied flies treated as above, required fifteen to thirty minutes to kill them. The druggists in Vienna purchase the whole flowers yielded, in the author's opinion, by the uncultivated Dalmatian *Pyrethrum cinerariæfolium*, Trev., and the powder they supply is a very energetic preparation. It is noteworthy that both these entire flowers and the powder prepared for them, after being kept six years, do not suffer any particular loss of activity. The author found the powder of the flowers of *P. cinerariæfolium* cultivated by himself also to be very active.

Pyrethrum roseum, M. B., of the author's cultivation, appeared to be slower in its action, which he ascribes to the circumstance that the discoid flowers are much more powerful than the radiate flowers, which appear to have little activity. The radiate flowers occur in *P. roseum* in much larger proportion than in *P. cinerariæfolium;* and to this fact he considers the greater activity of the latter due.

The fresh (undried) flowers of both these Pyrethrums will kill flies, but very slowly. The plant itself, powdered, appeared to be quite inactive. In a similar manner the author tested the powdered flowers of several Austrian Compositæ, and he found the following to be quite inactive in this respect:—*Chrysanthemum leucanthemum*, L., *C. Coronarium*, L., *Anthemisarvensis*, L., *A. Cotula*, L., *A. tinctoria*, L., *A. nobilis*, L., and *Inula Pulticaria*, L. The flowers of *Tanacetum vulgare*, L., and *Pyrethrum corymbosum*, Sm., appeared to have a very slight stupefying effect.

Of all the Austrian indigenous Composites tried by the author, only the powdered flowers of *Pyrethrum Parthenium*, Sm., and *P. inodorum*, Sm., exercised a stupefying influence upon flies, and that only

after the flies had been dusted from one to two hours; their value, therefore, as insecticides is very slight. In a scientific aspect it is, however, interesting to notice that up to the present time the action obnoxious to insects has only been observed in the genus *Pyrethrum*, whilst from other Composites approaching very nearly to that genus the property is absent.

Some years since the *Journal de Pharmacie d'Anvers* contained an article, which was copied into various other Journals, asserting that the insecticidal action of Persian insect powder was due to powdered flowers of *Anthemis Cotula*. As above stated, the author found the flowers of this species quite inactive, since flies which had been dusted with it were after four hours still able to fly away readily. The author conjectures that a species of *Pyrethrum* was mistaken for *A. Cotula*.

The cultivation of *Pyrethrum roseum* and *P. carneum* has already been attempted in various places in Austria. Paukert, an apothecary at Treunbritzen, has cultivated them for several years, and in Hager's *Pharmaz. Centralhalle* (vol. vii., p. 49), has detailed his method of proceeding, from which it appears that the growth of the plants has been very successful in richly manured soil. The author's experiment also with *P. cinerariæfolium* yielded the flowers at a slight profit. But as a very active flowers can be obtained from Eastern Asia and Dalmatia at a moderate price, he does not think that the home cultivation would be remunerative.—*Canadian Jour. of Phar.;* from *Zeitschr. des allg. österr. Apoth.-Vereines.*

JABORANDI.

Dr. Franz Riegel has lately administered this drug to several patients in the town hospital at Cologne, and has published the results of its employment in ten cases, viz.: exudation into the right pleura; chronic pneumonia, with acute nephritis; influenza (two cases), and convalescence from acute articular rheumatism. Dr. Riegel says that he thinks he does not go too far in asserting that jaborandi is an excellent diaphoretic and energetic sialagogue. Although it was in most of the cases difficult to produce sweating, even by the use of warm baths, etc., in every case the administration of the jaborandi was followed by abundant perspiration. To some of the patients a hot bath was given, for the sake of comparison, some days before or after the jaborandi; and they declared that they preferred the jaborandi, on account of the less amount of inconvenience which attended its use. The sialagogue effect was distinctly present in eight of

the cases; in two it was not observed; perhaps, Dr. Riegel suggests, there was an increased flow of saliva, but it was swallowed by the patients. (The two cases were, one of influenza, and one of chronic pneumonia.) There was no evidence of any notable increase of the bronchial secretion. The injection of the jaborandi was in no case followed by a great primary elevation of temperature, such as occurs when perspiration is induced by restricting the loss of heat. Observations by means of the sphygmograph, were made on the pulse in two cases; from the results of which Dr. Riegel infers that jaborandi produces relaxation of the arteries, and increased power of the heart. As after-effects, hiccough and eructations were observed sometimes, also vomiting; these, perhaps, being consequences of swallowing the saliva. In two cases slight *malaise* was produced; and in two there was some faintness, with transient *muscæ volitantes*, and disturbance of vision. There was frequently an increased desire to pass urine. All these after-effects were moderate in degree and soon passed off; so slight indeed were they that the patients always declared themselves ready for a repetition of the dose. The preparation used by Dr. Riegel was the powdered leaves, in packets weighing about a drachm, and marked as "One dose of Dr. Coutinho's jaborandi." In one case he divided the dose into two; in all the others he gave the whole quantity after infusing it for a quarter of an hour.

M. Vulpian finds that the diaphoretic action of jaborandi is much reduced by the previous administration of atropia.—*British Medical Journal*, Feb. 20.

ON THE LOCAL USE OF TANNIN.

Mr. Thomas writes to the *British Medical Journal*, on concentrated solution of tannin as a styptic: "I have used it for some years, as a topical application, in various diseases, though rather as an astringent than a styptic. To prepare it of full strength, an ounce of perfectly fresh tannin must be mixed with six drachms of water, in which it readily dissolves. The solution is a thick fluid, of the color and consistence of treacle, which keeps much better than tannin itself. Most of the tannic acid found in shops contains a large proportion of gallic acid, and will not yield a very strong solution. But if an ounce of old tannic acid be mixed with two ounces of water, a tolerably strong solution, which answers for many purposes, may be decanted off after subsidence.

"The strong solution of tannin is a most powerful astringent, almost free from irritating properties. It is one of the best dressings for wounds, far superior to collodion, and even less irritating than the

styptic colloid, which it somewhat resembles. If applied by a brush, and allowed to dry, it soon forms a pellicle which excludes the air, and gives ease to pain. It may be applied to almost any form of ulcer, and to wounds after amputations or other operations, especially when not very deep. It answers well, for instance, after the operation of hare-lip, painted over the pins and thread, in the same way as collodion is sometimes used.

"In a female, aged twenty-six, the hair was caught between rollers and the whole scalp removed to within an inch of the left eyebrow, and two inches from the right, round on a level with the tips of the ears to about the external occipital protuberance, the periosteum being extensively removed at the vertex. There was much suppuration, followed by erysipelas. After three months, exfoliation of bone occurred, and skin-grafting was performed, first with eleven grafts, and, six weeks subsequently, with twenty-one. After varied treatment, antiseptic and other, little progress was made till nine months after the accident, strong tannin solution was applied. Discharge and fetor diminished at once, and the healing process went on more quickly than before. Tenderness diminished, and the general health improved rapidly for the first time since the accident. The wound, eighteen months after the accident, was about half its original size, and the discharge trifling. The patient does household work, wears only a thin cap, and is little worse for the accident, generally or locally.

"Strong tannin solution applied to the ulcerated skin of toe-nail at once removes pain. After one application, the offending corner of the nail may be readily raised, a little lint inserted underneath, and the nail allowed to grow up. Among many cases, I have in this way cured one in which evulsion, twice performed, had proved only a temporary remedy, the disease being reproduced each time the nail grew up. For cracked nipples, this solution, diluted with an equal quantity of water, is the best application, and corresponds to the tannin solution commonly used for this purpose.

"Enlarged tonsils may be reduced by daily brushing with this solution. This treatment, though vastly inferior to extirpation, or even to the application of potassa cum calce, is painless, and therefore, in some cases, useful. Bleeding warts may be readily removed by this application, as also by the perchloride of iron. I have found the former to readily reduce the granulations from an unhealed umbilicus in an infant."—*Medical and Surgical Reporter.*

THE CYANIDES IN ACUTE RHEUMATISM.

Dr. A. Luton, of Rheims, publishes in the *Bull. Gén. de Thérap.*, January, 1875, an article on this subject. He begins by alluding to the innumerable specifics which have been vaunted in acute rheumatism, their very number suggestive of want of faith in any or all of them.

He specifies, in particular, propylamine and trimethylamine, as well as colchicum. Of the latter he says that it is the best remedy heretofore known, and were he to cease using the cyanides in rheumatism he should certainly return to colchicum. Its full benefit, however, is not gained until it is pushed to an almost semi-toxic extent. The factitious production of a gastro-intestinal catarrh, which is the effect of the use of this remedy, is, however, nothing in comparison to a disease which threatens existence not only at the moment but at any future time.

After describing his method of administering colchicum, Dr. Luton goes on to say that, in his opinion, the cyanides, particularly those of zinc and potassium, are destined to replace this drug in the treatment of rheumatism. He then gives a number of illustrative cases in which these cyanides were used with the happiest effect. The cyanide of zinc is a white powder, insoluble in water, easy to form into pills or to administer in suspension in some mucilaginous fluid. It possesses neither taste nor odor, and may be given without the patient's knowledge. In spite of this its physiological and therapeutic properties are real. It doubtless dissolves in the gastric juice. The doses in which Dr. L. gives this cyanide vary from three-fourths to one and a half grains, two grains, or even three grains, in a single day. The cyanide of potassium, pure and well prepared, is perhaps to be preferred, he thinks, to the salt of zinc, on account of its evident activity. In mixture he has given it in the dose of one and a half grains a day. On account of its disagreeable taste and the rapidity with which it alters in solution, it is best administered in the form of pills, coated with silver. It is not advisable to go beyond two grains per day; though cumulative effects are not to be feared.

At a certain point the physiological effects are produced: frontal headache, vertigo, nausea, some colic, occasionally slight diarrhœa; more frequently the stomach is advantageously stimulated, the appetite improves, and digestion becomes easier. Finally the cyanides bring about a certain degree of general sedation, and tend to produce sleep.

"It is certain," concludes Dr. L., "that the cyanides cure acute artic-

ular rheumatism, in its original form and in its diverse transformations. It cures by shortening the duration of the disease, and by diminishing the risks of complication. Rapidity is one of the essentials of all good anti-rheumatic medication. Add to this the fact that these preparations are not hard to take, and are *anodyne*, and we fulfil the three great recommendations—*cito, tuto, et jucunde*."

The Employment of Baths, etc., during the Menstrual Period.—The *Tribune Médicale*, No. 33, 1874, contains a report by Dr. Pradier on the above subject, followed by these conclusions:—

1. According to several authorities, some strong medicines, such as bleeding, emetics, and purgatives, may be administered without inconvenience during menstruation. 2. Hydropathic treatment and sea baths have been given under the same circumstances for a long time without evil effects. 3. Several physicians do not hesitate to prescribe tepid baths in the same conditions. 4. As to mineral baths, one of our brethren has permitted them in like circumstances for seven years past, without having seen the least accident occur.

Liquor Ferri Perchloridi as a Local Application in Cancerous Ulceration of the Uterus.—When the course of the cancer is rapid, the application of the strong perchloride of iron is of little use; but when the disease is purely epithelial, or chronic, or rodent in character, it relieves, or sometimes seems to cure bad cases. Its application rarely causes pain. All discharges should be washed away from the cancer, and the breech of the patient raised to prevent any overflow of the solution over the vulva. Cotton-wool saturated with the perchloride is then applied, and any superabundant solution which a slight pressure of the wool causes to flow out, is to be sucked up by a sponge from the bottom of the vagina. The wool is to be retained in its place by a loose plug of tow in the vagina, and the vulva oiled before the patient rises from the couch.—*The Lancet*, Dec. 12, 1874.

Treatment of Rheumatic Fever by Cynara (Artichoke.)—Dr. Copeman has treated rheumatism with the common artichoke, both in the form of tincture and extract, and has found no other medicine so efficacious. He employs the following formula:—

℞ Potassæ bicarb. ..... ʒ j.
Tincturæ cynaræ ..... ʒ j.
Syrupi papaveris alb. ..... ʒ ss.
Aquæ camph. ..... ad fl. ʒ viij.

Two tablespoonfuls are to be given every four hours, with as much of the extract of cynara as would make two moderately sized pills. Lemonade is given to quench thirst. Although Dr. Copeman has found this treatment so satisfactory, it has frequently failed in the hands of others. The reason of this he considers to be that the cynara has been prepared from leaves gathered at an improper time, when there is no medicinal virtue in the plant. The leaves should be gathered just before the top of the vegetable is fit for food, and whilst they are full of juice. If left until the top is fit for cooking purposes, and the plant begins to wither, no good will be derived from the medicine, and it will be condemned as useless and inert.—*British Med. Jour.*, Dec. 19th, 1874.

Rhamnus Frangula as a Substitute for Castor Oil.—Dr. Ogilvie Will, of Aberdeen, whilst accepting the general view that castor oil is as efficient and safe as any of the laxatives in the Pharmacopœia, dwells upon the well-known objections to its use. He then points out that his observations do not refer to the *Rhamnus catharticus*, or buckthorn, but to the *Rhamnus frangula*, or black alder. The part used is the bark, from which a fluid extract is obtained, each fluid drachm of which contains an equivalent of one drachm of the bark. This extract is a dark-brown, thick fluid, with a sweet and agreeable taste. The dose varies from one to two drachms for a child. It causes no nausea, no eructations, and no griping. The stools are not in general loose, and never watery; it usually only acts once. It seems to have, in addition, tonic and aromatic qualities by which the muscular action of the bowels is slightly stimulated. It is particularly serviceable in children, in those suffering from hæmorrhoids or other affections of the rectum; after surgical operations about the pelvis or abdomen; in inflammatory or spasmodic diseases of the genito-urinary organs; in pregnant and puerperal females, and generally in all circumstances in which it is desirable to move the bowels gently without occasioning local irritation or general disturbance.—*Med. Times and Gazette*, Feb. 6, 1875.

Action of Asarum Canadense.—Dr. P. R. Palm reports a case where abortion was produced at the third month by a strong decoction of the root of Asarum Canadense. There was neither vomiting nor purging such as would have followed the use of Asarum Europæum or Asarabacca. From this and other cases it appears that the Canada root is not so harmless as is usually supposed, and it is frequently confounded with Asarum Europæum by some apothecaries.

Effect of Tobacco on the Nervous System.—Dr. Brumbaugh writes:—"I have noticed for several years a growing tendency to

nervous affections and mental disorders. Partial paralysis, in which the integrity of a portion of the sympathetic or ganglionic system of nerves is involved, has been quite common in my practice. From observations carefully made I am constrained to attribute this tendency to the effects of the use of tobacco, as it is largely associated with the tobacco habit. Mental derangements from dyspepsia, which is attributable to the same cause, are also largely on the increase."—*Trans. Med. Soc. Pa.*, vol. x., pt. i., p. 270.

Petroleum Oil as a Vermifuge.—Basing his practice on the fact that horticulturists and veterinary surgeons use petroleum oil as a parasiticicle, M. Perrin has tried injections of this substance as a remedy for oxyurides. He gives it in doses of half a teaspoonful made into an emulsion with one hundred *grammes* of water, and given as an injection, which should be repeated for many days in succession. M. Perrin proposes to treat lumbrice and tænia by capsules containing twenty-five *centigrammes* (nearly four grains) of petroleum, of which ten or twelve should be taken in the course of twenty-four hours. When taken in small doses this substance cannot, it is said, bring on any unpleasant consequences.—*Gaz. des Hôp.*, Aug., 1874.

Infusion of Myrtle as a Remedy for Leucorrhœa.—M. Delioux de Savignac believes that myrtle, which contains both essential oil and tannin, is well indicated for leucorrhœa. The flowers contain only the essential oil, whereas the berries and leaves contain both principles, and he recommends an infusion of the latter two in the proportion of a litre of water to ten grammes of the leaves or berries. If a very powerful astringent action is desired, two or three times as much of the drug should be employed. The infusion should be employed either cold or tepid, in quantities of four or five pints, and should be carried as high up as possible. The agreeable odor of the infusion makes the remedy a favorite with those who are obliged to use something of the sort.

Sanitary Value of Iron Water-Pipes.—It appears from the following that iron water-pipes have a distinct sanitary value. Professor Medlock proved by analysis, a few years ago, that iron, by its action on nitrogenous organic matter, produces nitrous acid, which Muspratt called "Nature's Scavenger." The latter chemist found, as a general result, that by allowing water to be in contact with a large surface of iron, in about forty-eight hours every trace of organic matter was either destroyed or rendered insoluble, in which state it could be purified effectually by filtration. Medlock found, on examining the water at Amsterdam, which smelt and tasted badly, that the sediment charred on ignition, and was almost consumed, showing that it consisted of organic

matter. He also found that water, instead of taking iron from the service pipes, before entering them contained nearly half a grain of iron to the gallon; while in the water issuing from the pipes there was only an unweighable trace. Before entering the reservoir, the water holding iron in solution formed no deposits, while the water coming from the pipes, and freed from iron, gave organic sediment above mentioned. He then made analysis of water brought in contact with iron, and water not in contact, with the result that the water which had not touched iron contained 2·10 grains of organic matter, and 0·96 grain iron; the other gave only a slight trace of both, showing plainly that the organic matter in the water was either decomposed or thrown down by contact with iron, and this water when filtered, was found to be clear, of good taste, with no smell, and free from organic matter. It is not stated in what shape the iron was held in solution, but is probably in that of carbonate, the usual iron salt in springs.—*Sanitary Record*, Dec. 19, 1874.

Chocolate in Chronic Intestinal Catarrh.—A series of articles from the pen of Dr. Karner have lately appeared in the *Allgemeine Wiener Med. Zeitung* in which he shows the value of the substance as an article of food. In the last number of that journal he refers especially to its use in chronic intestinal catarrh, and cites, among others, the following typical case of chronic catarrh of the intestines, to illustrate its action in the simplest manner: "Rosalia M., aged 17 months, poorly developed and nourished, suffered from intense meteorism, numerous thin, fluid, feculent discharges, which alternated from time to time with normal stools. There was considerable emaciation, and the child also had intertrigo, of which there were frequent relapses. The diarrhœas could be attributed only to poor nourishment. After strictly regulating the diet, small doses of Dover's powder and acetate of lead were first administered, and in three days were substituted by the chocolate, of which a cupful was given daily. A dessert-spoonful of the powder sufficed for a cup of chocolate. The mother was also instructed to allow the child as little fluids to drink as possible. The result was astonishing. The discharges decreased in number day by day, the weight of the child rapidly increased, and after a few weeks it had perfectly recovered; a remarkable change for the better was observed in its bodily development, and the intertrigo had not recurred."

Bromide of Ammonium in Rheumatism.—Dr. J. M. DaCosta, Visiting Physician to the Pennsylvania Hospital, Philadelphia, while discussing rheumatism in a clinical discourse, says of this medicine, that the results he has obtained from it have been very satisfactory.

He has now had the remedy on trial for more than a year, and has come to favor its use from the fact that it relieves the pain, acts generally upon the skin, keeps up the action of the kidneys, and, as he thinks, lessens materially the tendency to internal inflammations. He is further pleased with the remedy for the reason that the cases which he has treated with it have seemed to have a shorter duration than cases treated according to other plans, and quite as short as those treated according to the alkaline plan. The advantage which it possesses over the alkaline treatment is that the recoveries are good recoveries; there is no pallor and anæmia, general distress, alteration of blood and tissues, which the long-continued administration of alkalies will cause. For these reasons he is in the habit of using the bromide of ammonium in the treatment of this class of cases. It is sometimes associated with acetate of potash, when internal complications render it desirable to have the influence of a somewhat more active diuretic.

As soon as the acute symptoms have disappeared, the remedy is followed by the administration of quinine in fair doses, which has, he believes, the power to lessen the tendency to relapses.

Physiological Properties of Cocaine.—Dr. Alex. Bennett (*British Medical Journal*, November 14, 1874) studied the properties of cocaine, as shown by experiments on frogs, mice and rabbits. He found—

1. That the physiological action of erythroxylon coca are due to its proximate principle, cocaine.

2. Cocaine is a powerful poison, inducing a series of symptoms affecting the nervous, respiratory, circulatory, and vaso-motor systems, which terminate, if the dose be large enough, in death.

3. Cocaine, in small doses, not ending fatally, produces (*a*) cerebral excitement, not succeeded by coma, and (*b*) partial loss of sensibility.

4. In large doses cocaine produces (*a*) cerebral excitement, (*b*) complete paralysis of sensibility, (*c*) tetanic spasms and convulsions, and (*d*) death.

5. Cocaine paralyzes the entire posterior columns of the spinal cord, also the entire system of peripheral sensory nerves, but the anterior columns of the cord and the peripheral motor nerves are not paralyzed.

6. Cocaine frequently produces convulsions of a clonic character, but occasionally it causes tetanic spasms so severe as to sometimes produce opisthotonos. These differ from the spasms of strychnia, in that the sensory nerves are paralyzed, so that external irritations do not affect the chord. Spasms are caused by the action of the drug on the cord itself.

7. Cocaine does not produce muscular paralysis.

8. Cocaine at first increases, then impedes, and, lastly, stops respiration.

Aconitia in Surgical Practice.—At the recent meeting of the French Association for the Advancement of Science, at Lille (*Le Progrès Med.*, Aug. 29), H. A. Paquet read a paper upon the employment of aconitia in the serious symptoms attending conditions of the organism occasioned by a grave wound. He had been led to the employment of this drug by the successes which had been previously obtained with it by Tessier in metro-peritonitis; by Chassaignac, who gave it as a preventative before operations; by Gubler, who administered it in intermittent fever; and by the experiments of Liégois, Hirtz, and the more recent ones of Grehant, "showing the sedative influence of aconitia upon the nervous and circulatory systems." The variety employed was the amorphous, or German, aconitia, given in doses of from four to six milligrammes (gr. $\frac{1}{16}$ to gr. $\frac{1}{10}$), in the form of granules. M. Paquet was not disappointed in the expectations he had formed as to its value, and in eight cases which he communicated to the Society, he had obtained excellent results with it. Three of these were instances of large lacerated wounds, accompanied by tetanic symptoms; two were cases of phlegmonous erysipelas, and three were operations for a strangulated hernia. M. Paquet asks whether the drug may not also be useful in preventing purulent infection. A peculiar phenomenon is observed during the administration of aconitia, viz., the occurrence of troublesome itching over all the body, especially on the face and about the ears.—*Irish Hospital Gazette*, Dec. 15, 1874.

External Use of Turpentine in the Treatment of Tonsilitis.—In the *Leavenworth Medical Herald*, Dr. S. H. Roberts strongly recommends the use of turpentine externally in tonsilitis. He folds the flannel to four thicknesses, wrings it out in hot water, and pours oil of turpentine over a spot the size of a silver dollar. The flannel is then applied over the sub-parotid region, and the fomentation continued as long as it can be borne. After removal, a dry flannel is applied, and the same region rubbed with turpentine every two hours. This application is continued daily till resolution occurs. The doctor believes, from the evidence of his long experience, that thus applied early in the disease the oil of turpentine has almost a specific effect in tonsilitis. That its action is not simply that of an irritant, he has proved by employing mustard, croton oil, tr. iodine, etc., in the same class of cases. They always failed to diminish the inflammation of tonsils, while the turpentine succeeded.

Iodic Acid in Hypodermic Injections.—Dr. Luton has been investigating the above substance, the properties of which appear to be very remarkable. Iodic acid is highly soluble in water; a solution of one-fifth has been obtained, and it is that which Dr. Luton employs. In this proportion, iodic acid does not produce a sore, but it causes amidst the tissues into which it is injected a deep modification which induces rapid absorption. Dr. Luton has employed it in goitre, in indolent adenopathic swellings of the cervical and sub-maxillary regions, and in case of osteo-periostitis of a phalanx of the hand. The results have been excellent. Upwards of half a drachm of the solution, as above, has been injected at once. This substitutive injection is thrown into the midst of the tumor, and Dr. Luton thus utilizes the natural envelope of the ganglion or degenerated growth, and avoids a diffusion which might be attended with some inconvenience. The local reaction consecutive on the injection is somewhat marked, but is never accompanied by an accident; resolution, without suppuration or mortification, is almost invariably the rule.—*London Lancet.*

The Ailanthus as a Remedy.—*The Archives de Médecine Navale* publishes an official note, addressed by Dr. Robert, who is the medical chief of the naval division of China and Japan, to the Inspector-General of the Health Service in the French navy, calling attention to a drug used by the Chinese physicians in the treatment of dysentery. It consists of the root-bark of the common ailanthus, and is by them employed in the fresh state only; but Dr. Robert, having been compelled to use some that had become dry, found no sensible difference in its action in the two states. For administration, one and a half ounce weight of the root is cut into very small pieces and triturated with two ounces of hot water for a few minutes in a mortar, in order to soften the bark, and then strained. A teaspoonful of this strong infusion is administered as a dose morning and evening, alone or in a cup of tea. Taken in this form it provokes vomiting. The medicine is administered in this manner during three days, the patient being kept upon full diet. After that time the ailanthus is omitted, and the diet is altered to broths until health is restored; if there is no cure at the end of 10 days, the use of the ailanthus is recommenced.

The Action of Morphia Subcutaneously Injected.—From one thousand experiments made upon himself by Chouppe (*Gazette Méd.*, No. 35, 1874) the conclusion was drawn that morphine injected *in loco dolenti* develops its anæsthetic action in two to two and a half minutes earlier than when injected at a distant place. Pain ceased sooner after direct than after general application. A further direct

proof of the local anæsthetic action of this agent was derived from the employment of concentrated solutions. While an injection of distilled water and a weak solution of morphia (1–150) caused sharp pains at the point of insertion, strong solutions (1–50 or 1–130) caused no perceptible pains. The indication, therefore, is to make the injections at the seat of pain, and to use concentrated solutions.—*Allgem. Wiener Med. Zeit.*, Oct. 27, 1874.

Nitrate of Amyl in Cardialgia and Tetanus, etc.—Funkel (*Deutsches Arch. f. Klin. Med.*) recommends the use of this remedy in cardialgia. After a few inhalations the pain disappears, and if it return, as in a few instances it does, they are to be renewed. The neuralgias accompanying menstruation have also yielded to its influence. One case of tetanus, which had resisted the action of all the means hitherto applied, yielded promptly to the inhalation of two drops three times a day.—*Berlin Klin. Woch.*, Jan. 4, 1875.

Tannin in the Coryza of Adults and Children.—"You are constantly telling us," it is sometimes said, "of the great progress made in recent times by medicine, and you have not yet found out, from the time of Hippocrates until now, the means of curing coryza." Those who reproach us in this way forget to add that, not wishing, for the sake of curing a simple "cold in the head," to submit to any of the hygienic measures rationally indicated, they demand in reality a prompt means of cure, easy to follow, even while travelling. Even those who cry up infallible specifics most loudly have never proposed anything more than some palliative, and these, from ammonia to iodine, are always in a liquid form, just the shape which is most difficult and inconvenient to carry about. In general, all these preparations are far from compensating by their utility for the inconvenience of their employment.

For ourselves, who do not intend to change our habits or suspend our business any longer for the sake of a coryza, every time we have been attacked by our enemy we have put the question upon a practical footing, and have endeavored no longer to cause the disease to disappear instantaneously by some sovereign *specific*, but to diminish its principal inconveniences, and to render its attacks in some degree tolerable.

Observe how we have attained our object. The first symptoms of coryza are congestion of the mucous membrane of the nasal fossæ, with dull headache, heat in the upper part of the face, sleepiness, dryness of the mouth and throat, more noticeable when swelling of the mucous membrane closes the nasal passages completely, obliging the patient to

breathe with the mouth constantly open. Such are the principal tortures of a "cold in the head," and for which relief is most urgently demanded. It is evident that if an energetic contraction of the mucous membrane can be brought about, so that its volume shall be diminished, this desideratum can be attained. In short, when the air finds a free passage through the nasal fossæ, the frontal headache and the lachrymation will disappear, and at the same time the dryness of the mouth, which may then be kept closed.

In addition, the mucous membrane being compressed like a sponge, makes easy the expulsion of those fluid mucosities which cannot be detached under ordinary circumstances without great effort.

We may obtain these results constantly by the use of tannin made into a powder after the following formula:

℞ Tannin..... gr. ¾
Pulv. iris,
Pulv. althææ, āā ..... gr. xv.
Tinct. vanillæ..... gtt. iv.
M.

To be taken in small pinches three or four times a day, or oftener if necessary.

Coryza, which in the adult merely presents inconveniences easy to support, becomes, on the other hand, a serious matter when it attacks an infant. Here, as all physicians know, the occlusion of the nasal fossæ may directly threaten life, because rendering efforts at suction of the breast impossible. It is necessary to act immediately; and it must be confessed that the means heretofore recommended have proved totally inefficacious. Observe our method of combating the danger.

After having prepared the following ointment,

℞ Tannin, gr. ¾;
Axungiæ, ℥i. ℈i.;
Tinct. vanillæ, gtt. v.—M.

we roll between the thumb and index-finger a very small square of paper so as to form a not very rigid cylinder, which will yield easily to any lateral movements which may be made by the infant while it is being introduced into the nostrils. Then, after having smeared the exterior with the ointment, it is introduced deeply into each nasal fossa.

In this manner we often bring about one or two very salutary attacks of sneezing, and always the effect just noticed as occurring in the adult, that is to say, free circulation of air in the nasal fossæ follow-

ing the subsidence of swelling in the mucous membrane. The parents are always struck with the rapidity with which the infant returns to the breast, thanks to the success of this little manœuvre. It is because we are convinced that we have rescued more than one infant from imminent danger that we lay stress upon the process which has demonstrated to us that, in the medical treatment of infancy, it is the trifling appliances which often produce the best effects.—Dr. D., in *Tribune Médicale*, Jan. 17, 1875.—*Medical Times.*

Acne in a Child from Bromide of Potassium taken by the Mother.—A case is reported in the *London Lancet*, by Dr. Tilbury Fox, of a child three months old affected by an eruption of acne, which was referred to the use of bromide of potassium by the mother. She had taken it for more than a year for epilepsy, with no such effect on herself. That the eruption was thus produced was rendered clear by its disappearing whenever the mother ceased to nurse the child.

Subcutaneous Injection of Carbolic Acid in Traumatic Erysipelas.—Dr. Hirschberg relates the case of a slaughter-man who accidentally cut his upper arm, the wound being about five inches long, and penetrating the muscles. A good deal of venous hemorrhage followed. On the second day a bad attack of erysipelas of the arm came on. A two per cent. solution of carbolic acid was injected subcutaneously at the upper boundary of the erysipelas, and next day all traces of erysipelas had disappeared. The injections were repeated five times within the next three days, and the wound healed far more rapidly and with much less suppuration than could have been expected.—*Berlin Woch.*

Chloral.—In the Société de Chirurgie* there has been a discussion upon the treatment of tetanus by chloral, from which it would appear that the society considers chloral as one of the best, if not the best, means to oppose the disease. Most of the members were of the opinion that it is necessary to administer it at once in a large dose, in draught or enema, reserving the use of intravenous injections for the severest cases.

M. Colin† has made some experiments to compare intravenous with subcutaneous injections of chloral. He finds that intravenous injections may be borne in large doses if given slowly and with very dilute solutions; if given otherwise, they may cause death quickly, and even

* Jour. de Thérap., 1874, p. 665.

† Journal de Thérapeutique, July 25, 1874, page 548.

instantaneously, by syncope. Chloral under the skin is borne in larger doses. It acts promptly, and the sleep produced is as profound and prolonged as when given by the veins. It may produce asphyxia from irritation of the vagi and recurrent nerves, when injected around the neck.

A case of chloral poisoning from three hundred and sixty grains has been successfully treated with strychnia subcutaneously.*

M. Oré thus formulates his method of producing anæsthesia by the intravenous injection of chloral, founded on fourteen cases with fourteen successes.† An essential condition is puncture of the vein without denudation or dissection, unless the patient is very fat, when the vein may be exposed by an incision. The solution should contain ten grammes (one hundred and fifty-four grains) of chloral in thirty grammes (about a fluid ounce) of water. At least five grammes are necessary for anæsthesia. M. Oré waits before operating three or four minutes after the cornea has become insensible. One gramme per minute should be injected, five to eight minutes thus being necessary for the preliminary operation. If the canula remains longer than this there is a liability to the formation of clots. The advantages of the operation are: no disturbance of respiration; insensibility varying with the dose; no period of excitement; never any vomiting; deep, calm, regular sleep, which, lasting from ten to twenty-four hours, completely annihilates the after-effects of the operation; *never* phlebitis, clots, or hæmaturia when the injection is *properly done.* According to M. Oré, whenever clots have been found adherent to the wall of the vein,‡ the cause is not in the chloral, but in the way in which it has been employed, or in some previous alteration of the blood. Hæmaturia has never been observed in man.

M. Martineau § finds a four per cent. solution of chloral applied upon a tampon a useful application in cancer of the uterine cervix. The hemorrhages cease, the fetid discharge disappears, and the pains are diminished, although of course the disease itself is not checked. It is also a useful application in wounds, when they are the result of eschars or sphacelus. In three cases sleep has followed the application of the chloral. Several cases of varix have been cured by the injection of chloral. [Probably from local irritation.—Rep.]

MM. Feltz and Ritter, in experimenting upon dogs, found that upon killing them by repeated injections of sufficient chloral to keep them in a continuous state of anæsthesia, the urine contained dissolved

* Journal de Thérapeutique, August 25, 1874, page 639.

† Journal de Thérapeutique, November 25, 1874, page 873.

‡ Boston Medical and Surgical Journal, September, 1874. Report on Thérapeutics.

§ Journal de Thérapeutique, July 25, 1874.

hæmoglobin. After death, ecchymotic spots were found upon the intestinal mucous membrane, and congestion of the kidneys. The blood was profoundly altered, the globules deformed, without elasticity, the plasma was tinged red, and the globules had notably lost their capacity to absorb oxygen. The *expired air yielded chloral and not chloroform.*

M. Tanret finds that if to a mixed solution of hydrate of chloral and permanganate of potassa an alkaline solution, such as caustic potassa, or even borax, be added, oxide of carbon is disengaged.

He thinks it probable that this decomposition takes place in the blood, and that the fall of temperature observed during the action of chloral is like that observed by Claude Bernard in poisoning by carbonic oxide, which combines with the blood-globules.—*Boston Med. and Surg. Jour.*

Chloral in the Prevention of Sea-Sickness.—Dr. Giraldes has published, in the last number of the *Journal de Thérapeutique*, an account of the means by which he avoided sea-sickness during two passages to England and back. He was at Boulogne last June *en route* for London, when the weather was so rough that many intending passengers hesitated to cross the channel. Dr. Giraldes was informed by a colleague at Boulogne that American physicians used the syrup of chloral as a preventive of sea-sickness with successful results. He therefore obtained some syrup of chloral, put himself into a quiet corner, and took his syrup directly the vessel was in motion, when, although his fellow-passengers experienced the usual unpleasant consequences, he arrived at Folkestone without having suffered the least inconvenience. The same results were obtained on the return voyage; but he increased the amount of chloral. He had again occasion to cross the channel at the end of September, by the night boat from Calais to Dover, and thinking with reason that the sea would be rougher at that season than usual, he had a draught made up composed of chloral, 3 grammes (45 grains); distilled water, 50 grammes; gooseberry syrup, 60 grammes; and French essence of peppermint, 2 drops. He took half of the draught as the vessel left the harbor, and arrived at Dover without having suffered in the least from sea-sickness, whilst his companions were in the usual condition of prostrate misery. A very heavy sea was running. On his return from London, on October 30, there was a high sea and much wind; he accordingly took the remaining portion of his draught, soon went to sleep, and only awoke on his arrival at Calais in the best possible condition. Dr. Giraldes remarks that he is, as a rule, affected by sea-sickness when he crosses the channel, and that his two trials of chloral have convinced him of its efficacy as a

preventive of that most disagreeable malady. He adds that he never goes down into the cabin, but makes himself as comfortable as circumstances will allow on deck.—*London Medical Record.*

The Mode of Action of Iodine.—Kämmerer * believes that the action of free iodine as a medicine depends on the direct destruction of the parts of the body brought in contact with it, and that the general action of iodide of potassium is completely identical with the local action of free iodine; an identity which is to be explained only by a decomposition of the iodide in the blood with formation of iodine. Binz supposed that this decomposition might be represented by the formula $2KI+CO_2+O=K_2CO_3+2I$, which, according to Kämmerer, is impossible, since iodine acts upon a watery solution of an alkaline carbonate with a formation of an iodide and an iodate of the alkali.

Kämmerer assumes that, beside the free iodine, another body must be formed, upon which iodine does not act, and considers such the superoxide of potassium, which easily oxidizes organic bodies, by which it is reduced to potash, and thus favors the metamorphosis of tissue. The organic bodies to be oxidized may be miasmatic substances and ferments, or, later, fibrine and albuminous bodies.

Buchheim, after stating that iodide of potassium is an easily dialyzable salt, and as such is rapidly eliminated from various mucous membranes, finds in the ozone which is always developed wherever watery evaporation is rapidly going on, and therefore on the skin and mucous membranes, an agent which is capable of setting free the iodine from its combination, thus giving rise to the well-known coryza in the air-passages, and, when the iodide is eliminated with chloride of sodium in the perspiration, to the well-known acne-like eruption upon the skin, especially those parts exposed to the air and to free evaporation.

The increased destruction of albuminoid material spoken of above by Kämmerer, Buchheim cannot admit, on either chemical or clinical grounds. A destruction of miasmatic substances and ferments is not among the observed effects of iodide of potassium. Again, neither the temperature nor the excretion of urea is increased by its use, as they should be according to Kämmerer's theory. The emaciation and dyspeptic symptoms observed from the use of tincture of iodine and of Lugol's solution are not necessary consequences even of the long-continued use of iodide of potassium.

Buchheim suggests that the free iodine acting upon the walls of the smaller blood-vessels and capillaries may so irritate them as to cause their contraction, and thus a diminished blood supply to certain very

* Virchow's Archiv, lix., 459, ix., 526, and Centralblatt, 1874, page 716.

vascular organs, as the thyroid gland and the spleen, which show especial susceptibility to the action of this drug. With small doses this action is felt only upon organs having a specially favorable organization for it, as in those just mentioned, while if the dose is larger the action is a more general one.—*Boston Med. and Surg. Jour.*

The Active Element of Cod-Liver Oil.—Why does cod-liver oil produce better results than any other oil? One of the earliest answers given to this question was, because it contains iodine; but the amount of iodine contained therein is exceedingly small, and no greater than that found in salt-water fish and oysters. The statements as to the presence of biliary matters rest on imperfect and somewhat antiquated chemistry, but may perhaps after all be not without weight. Naumann showed that fish-liver oil passed through membranes with greater facility than any other fat oil; and that liver-oil, deprived as far as possible of its biliary matters, lost much of this property and behaved like other oils.

Buchheim* finds in cod-liver oil a considerable proportion of free fatty acids, which render more rapid and thorough the saponification and absorption of the oil by the alkaline fluids of the duodenum. What the precise proportion between free fatty acids and the glycerides may be which is most favorable to their digestion, is a point yet to be determined. It does not follow that it is the same as that existing in cod-liver oil. It may even be advisable to administer free fatty acids instead of cod-liver oil. He, therefore, hopes, since stearic and palmitic acids are solid at ordinary temperatures, that some means may be found for manufacturing in abundance pure oleic acid, which may either be used alone or added to cod-liver oil, and replace the partially decomposed oleic acid to which the disagreeable odor and taste of the darker varieties of cod-liver oil are due.—*Boston Med. and Surg. Jour.*

Hypodermic Aperients.—M. Luton found, in 1873, that a subcutaneous injection of a solution of ten centigrammes of sulphate of magnesia in one gramme of distilled water acts as a laxative, or even as a true purgative. Subsequent investigations have also proved to him that these purgative hypodermic injections in the above dose suspend symptomatic vomiting in cancer of the stomach, dyspepsia and gastric catarrh. He also recommends their trial in the nervous vomiting of pregnancy, of migraine, of sea-sickness and of essential ileus.—*Med. Times and Gaz.*, from *Gaz. Méd. de Paris.*

* Archiv fur Exper. Pathol. und Pharm., iii., 118.

On the Therapeutic Uses of Propylamine and its Salts in various Diseases.—Dr. Phillippo Cerasi, in a work recently published by him, affirms that this drug is not poisonous when it is given in suitable doses (from nine to forty-five grains *per diem*). He fortifies his opinions by the experiments of M. Raynal and Dr. Dujardin-Beaumetz, and adds that in his practice he has always found a difference of action between the chlorhydrate of trimethylamine and the chlorhydrate of amylamine. The former rather possesses a sedative action on the nervous system, and the second diminishes the temperature more rapidly by regulating the circulation. He also observes that all the salts of propylamine have a more or less rapid and marked action on the nervous and cardiovascular system. He has successfully employed propylamine and its derivatives in fourteen cases of acute rheumatism. In three cases the patients showed well-marked cardiac symptoms, intense dyspnœa, very painful precordial pain, and small pulse; all these morbid phenomena gave way rapidly to the action of the drug. Dr. Cerasi mentions that in one case where the pains in the joints persisted, he used propylamine as an external application with much success. He had the painful joints rubbed with a liniment composed of one part of propylamine in three parts of glycerine, over which a layer of wadding was laid. This is a fact of some importance.

Dr. Cerasi having made up his mind from these experiments that this drug has a salutary action on rheumatism, by the depressant power it exercises on the cardiac activity and arterial dilatation, and by its narcotic powers, in order to determine if these therapeutic qualities were really present, he tried analogous experiments in other diseases, and he has begun to use it in affections in which it is necessary to moderate and regulate the circulation of the blood. He prescribed chlorhydrate of trimethylamine for four patients suffering from imperfect cardiac innervation, and it succeeded in calming the heart's action with sufficient quickness. He also had reason to be satisfied with its use in two cases of hypertrophy and one of cardiac dilatation. In a case of acute pericarditis, this drug diminished the pain and lessened the force of the pulsations; whilst in two cases of catarrhal pneumonia, and in one of amygdalitis accompanied by fever, propylamine had advantageous effects. Dr. Cerasi thinks that if ulterior observations, taken on a large scale, should serve to confirm the fact that this agent, which moderates the excess of caloric, can arrest the morbid processes in which profound organic oxidation is the great cause of the regressive organic metamorphoses, the practitioner would possess a precious means of gaining time and combating disease with greater certainty.

Pursuing his researches, Dr. Cerasi made experiments with propylamine, administered in cases of infectious disease. In two cases of

typhoid fever, and in one case of typhus, he found the temperature lowered by the use of this medicine. In two cases of pyæmia, the propylamine lowered the temperature progressively; but in one of them the temperature, having fallen to 37°, suddenly rose to 40°, and the patient died. He obtained a notable lowering of the temperature in two cases of scarlatina and in one of malignant small-pox during the suppurative stage. He made use of it in a case of acute alcoholism, accompanied by a very high temperature, which is a serious symptom; the first day it was 38.2° Cent. (100.76° Fahr.), the second 39.5° Cent. (102° Fahr.), the third day over 40° Cent. (104° Fahr.). It was then that chlorhydrate of amylamine was administered, and at the end of two days the temperature had fallen two degrees. The same plan of treatment was persevered in, and on the fifth day the temperature fell to 38°, and on the ninth day it was at 37.2°.

From these results, Dr. Cerasi concludes that propylamine and its derivatives exercise a depressing action on the cardiovascular circulation, and that this action appeared to him to reside in a certain elective action on the heart and the tonicity of the arterial vessels. It also diminishes the excess of heat produced by certain morbid processes, especially in those caused by the presence of ferments. It brings the peripheric circulation into harmony with the central circulation, especially when the defective distribution of the blood is caused by disturbed innervation. Dr. Cerasi closes by requesting physicians to verify his observations.—*London Med. Record*, Jan. 13, 1875.

On the Action of Nitrite of Amyl on the Blood-Corpuscles and on the Temperature of the Body during Inhalation of this Substance.—No. 43 of the *Berliner Klinische Wochenschrift* commences with an article by Dr. Aug. Ladendorf, writing from the Sachsenberg Lunatic Asylum, where his observations, embracing more than forty cases, were made, partly upon sane persons, and partly on those recovering from different psychoses. The time selected was generally from 3 to 5 P.M., or after 8 P.M., thus avoiding times when a normal rise of temperature might be expected. The thermometer was placed in the mouth, between the cheek and the superior maxilla—a space almost shut off by the tongue from the nasal respiratory tract. The readings were made by the help of a lens magnifying six times, so that by using a thermometer divided into tenths it was possible to recognize, without much chance of error, $\frac{1}{100}$th of a degree Centigrade, equal to $\frac{1}{56}$th of a degree Fahrenheit nearly. The general result is that the temperature always rises after the inhalation. Many circumstances affect the amount of this rise—such as the quantity of vapor inhaled, the surrounding atmosphere, the contraction of blood-

vessels, individual peculiarities, etc.; so that two persons with the same initial temperature may show differences of 0.53° Cent., equal to 0.95° Fahr. It is, however, interesting that this rise can generally be demonstrated for from one to two hours, for this explains the beneficial and continued effects of the remedy in disease. A table of thirty-six cases is given, with the temperatures observed, the differences, their maxima, and remarks. The smallest maximal elevation of temperature was 0.1° Cent., equal to 0.2° Fahr. nearly (in three cases); the highest maximal rise was 1.88° Cent., equal to 3.38° Fahr. (one case); the mean rise was 0.39° Cent., equal to 0.7° Fahr. (thirty-six cases); or, in other words, the temperature rises rather more than half a degree Fahrenheit after the inhalation of nitrite of amyl. This elevation is very evident in the course of the second minute of inhalation. The purer the preparation inhaled, the more evident the effect. The effect on the pupils was not very uniform. In all the cases when simultaneous observations were made, the axillary temperature rose correspondingly. Horatio Wood (*American Journal of the Medical Sciences*, cxxiii.) and Pick (*Ueber das Amylnitrit und seine therapeutische Anwendung*, Versuch 13) observed a fall of temperature in animals; but perhaps this resulted from the mode of experimenting. Höstermann's account of the pulse (*Wiener Med. Wochenschrift*, 1872, Nos. 46, 47, 48) is confirmed by these experiments. These effects, probably, have a common cause—not mere dilatation of the vessels.

Ladendorf confirms Pick's observations (also made by others) as to objects appearing yellow after the inhalation; and advises the lips, nostrils, etc., to be guarded from direct contact, as vesication is apt to take place, if they are not so protected.

Therapeutic and Physiological Action of Ipecacuanha and of its Alkaloids.—Dr. Polichronie has made, in M. Vulpian's laboratory, a series of very interesting researches in order to ascertain the mode of action of ipecac and emetin. M. Polichronie's conclusions are as follows:—

1. Emetine is the true active principle of ipecacuanha; all the physiological, therapeutic, and toxic properties possessed by this plant are due to the presence of its alkaloid.

2. In dysentery, as in diarrhœa, ipecac administered by injection possesses as active properties as when it is given by the mouth, according to the Brazilian method.

3. Ipecac by injection is one of the best forms of treatment which can be employed in cholera infantum; it may be supported for a long time without enfeebling young subjects.

4. In tuberculous diarrhœa, whatever may be the period, injections of ipecac give good results.

5. This medication may also be employed with advantage to combat the profuse sweats of phthisis.

6. Emetine is a highly toxic substance; it may give rise to death in animals in two ways,—sometimes by prostration of the nervous system, sometimes, when given in smaller doses, by the intense enteritis which it provokes.

7. Two hypotheses are possible to explain the favorable action of ipecac in diarrhœa: *a*, a vasculo-constrictive action, which diminishes the abundance of the secretions; *b*, a substitutive action, which results from the inflammation of the mucous membrane.

8. The vaso-constrictive action does not take place, as experiments made upon the nerve of the submaxillary gland and upon the arterial tension show.

9. The production of inflammation of the gastro-intestinal mucous membrane, the duration of which is prolonged after vomiting has been brought about, seems, on the contrary, to plead in favor of the second view.

10. Emetine causes vomiting at the moment when it is eliminated by the gastric mucous membrane, while vomiting is retarded, and even more frequently does not take place after section of the par vagum. It is quite different with apomorphia and tartar emetic. These two substances bring about vomiting as quickly when these nerves are cut as when they are intact.

11. Finally, physiological and chemical researches upon the medicine argue in favor of elimination of emetine by the gastro-intestinal mucous membrane.

12. Emetine has no direct vomitive action upon the central nervous system, as is proved by direct injections of this substance into the cerebral arteries.

13. Therefore, it may be admitted that, in diarrhœa, emetia acts by substituting for the pathological inflammation a fresh one tending to spontaneous cure, its effect in these conditions being in every way comparable to that of purgatives or nitrate of silver.

14. In sweats we can no longer admit a vaso-motor action, and we are obliged to believe either that being eliminated by the sudoriferous glands, it tends to restrain their secretion, or, better, that it acts by the revulsion which it causes to the digestive tube (Thèse de Paris, 1874). —*Bulletin Général de Thérap.*, January, 1875.—*Medical Times.*

Action of Emetics on Striated Muscles.—Dr Harnack (*Archiv für Experimentelle Pathologie und Pharmakologie*, Bd. iii. p. 44) has

observed the curious fact that all the emetics with which we are acquainted have the power of paralyzing voluntary muscular fibre, though it is not certain that all muscular poisons are also emetic. Tartar emetic and salts of copper and zinc paralyze the heart and voluntary muscles, both in frogs and mammals. Salts of mercury also paralyze the muscles; salts of lead only do so when enormous doses are given; while salts of manganese and tin do not paralyze them at all, though manganese paralyzes the nerves. The emetics of vegetable origin, emetia, apomorphia, cyclamus, asclepia, sanguinaria, delphinia, veratria, digitalin, asarin, and colchicin all paralyze striated muscles. The author attributes the muscular weakness produced by emetics, in part, at least, to their action on the muscles themselves. His experiments seem to show that salts of copper produce vomiting by their local action on the stomach itself, and not on the nervous centres; for the dose required is smaller when it is introduced into the stomach than when it is injected into the blood. The paralyzing action of emetics affords an explanation of the fact that large doses of emetics, especially when they are injected into the blood, do not cause vomiting. The muscles are too much weakened by the drug to be capable of the necessary exertion.—*Practitioner*, Dec., 1874.

Emetics in the Cold Stage of Ague.—Surgeon A. R. Hall writes: A very successful mode of treating the cold stage of ague, and one extensively employed by medical men in India, is to give an emetic at the commencement of the stage when shivering first begins.

The emetic he employs, on account of its slight depressant effect as compared with ipecacuanha, is sulphate of zinc, half a drachm of which is ordinarily sufficient when followed with copious draughts of hot water to the extent that the patient can be induced to swallow. The shivering fit is usually cut short at once upon the induction of free vomiting. He conceives that the mode of action consists in relaxation of the muscular fibres of the vessels and the promotion of free circulation through the surface, extremities, lungs, and system generally. It has frequently been noticed in India that the cold stage of intermittent fever can hardly be distinguished from the collapse of cholera.

On the Use of Alkalies.—Dr. Waggoner (*Transactions of the Medical Society of the State of Pennsylvania*, No. 10, 1874) writes: "Since I entered the practice of medicine, twenty-five years ago, I have had trouble with the iodides. Many stomachs will not tolerate them; and moreover, my patients were complaining of enteric flatulence, and the bad smell of all the emanations from the body. I

speak, also, from personal experience. As a substitute, I have been using the alkaline carbonates and bicarbonates, with good success, and more satisfaction to my patients. Those who were troubled with glandular enlargements and indolent ulcers, and whom I had treated with iodide of potassium as the *sine quâ non*, are now relieved quite as promptly by bicarbonate and carbonate of potassa and soda. I think we made a mistake when we accredited the cure to the iodine instead of the alkali. I give this as the result of observation and experience, and also because it was Professor Nathaniel Chapman's favorite remedy. He used salt of tartar or carbonate of potassa."

[In the recent edition of Sidney Ringer's Hand-book of Therapeutics, speaking of this class of remedies, the author says: "We wish to draw attention in this place to one important property of alkalies,—namely, their power to increase the secretion of the gastric juice itself, and *acid* secretion. We venture to think that many facts warrant the following generalization:—that alkalies applied to the orifices of glands with acid secretions, increase their secreting power; while alkalies applied in a corresponding way to glands with alkaline secretions, lessen or check their secretion."]

Treatment of Atonic Wounds and Chronic Ulcers by Sulphuret of Carbon.—M. Paul Guillaumet, house-surgeon at the Saint-Lazare Hospital, laid before the meeting of the Société de Thérapeutique, on January 27, the details of some cases collected in Dr. Costilhès' wards. Some of them were cases of ulcer which had resisted all kinds of treatment, and were favorably modified by sulphuret of carbon. M. Guillaumet is of opinion that sulphuret of carbon is a very powerful cicatrisant. Its action is limited and rapid, entirely local, and does not bring on any of the accidents which follow the prolonged inhalation of the vapors of this substance. There is sometimes acute pain at the moment of application, but it rarely lasts longer than from twenty to sixty seconds, and is immediately followed by an anæsthetic period which lasts several hours. The sulphuret acts upon wounds of different nature and origin, such as those connected with syphilis, scrofula, and diphtheria, and changes them all beneficially. It is a valuable agent in the treatment of chronic and atonic wounds and ulcers. As this substance is extremely volatile, and has a very disagreeable odor, M. Guillaumet gives very precise directions for its use. The bottle containing the pure sulphuret of carbon should be held very near the wound; a pledget of lint should be steeped in the liquid, pressing out the surplus of the medicament on the edge of the bottle; then the pledget should be quickly and lightly passed over the surface of the wound, which should immediately be covered up with

finely pulverized subnitrate of bismuth. The same method is pursued for all wounds, including those of the neck of the uterus. The powder of bismuth plays the part of an insulator, and acts as a protecting covering against the too rapid evaporation of the drug, increased by the heat of the body.

Action of Conium upon Cutaneous Sensibility.—M. Gubler reported, at a recent meeting of the Société de Thérapeutique, certain facts which show that hemlock modifies sensibility, and called attention in particular to the well-known phenomena attending the death of Socrates, and the observations recorded by Hunter, where a man who had taken a large dose of hemlock had lost the use of his fingers. He then went on to relate a case coming under his observation, where this action upon sensibility had been most evident.

It was that of a woman who had applied a pomade containing conium, with the fingers of her right hand, to a tumor of a cancerous nature situated upon her husband's body in the region of the liver. After a time, the fingers which had been used in making the friction lost their sensibility. The woman then ceased using the right hand and employed the left, covered with a glove; but in spite of this the fingers lost sensibility. All these symptoms disappeared rapidly upon ceasing the employment of the ointment.

Dr. Gubler draws attention to this fact in order to show the reality of those modifications of sensibility brought about by conium, a proposition which he had already recorded in his "Commentaires de Thérapeutique."—*Bull. Gén. de Thérap.*, January 30, 1875.

Tolerance of Morphia.—At a meeting of the Baltimore Med. Society, Prof. Arnold relates the case of a young man, now in the Washington University Hospital, who takes from ten to twelve grains of morphia daily. He fell from a trapeze on which he was performing, and injured his spine. He suffers intense pain when deprived of morphia, the use of which he cannot abandon. There is no impairment of digestion.

The Value of Quinia in Accelerating Parturition.—Dr. O. B. Stafford, of New Boston, Ill., reports (*N. Y. Med. Jour.*, Feb. 1875) several cases illustrating the value of quinia in accelerating parturition. In his first case his patient had been in labor for twenty-four hours, but for two hours previous to his seeing her had been without any pain whatever. Found a well-dilated bag of waters presenting properly, but everything pertaining to active labor positively quiet. He gave her eight grains of sulphate of quinia at one dose, and in

twenty minutes strong expulsive labor-pains set in, and in one hour labor was terminated.

In another case the patient had been in labor about eighteen hours, but aside from presentation of bag of waters and dilatation of os uteri to the size of a shilling, no progress had been made. After waiting two hours, and finding that manipulation about the os failed to produce any uterine contraction, Dr. Stafford gave her about seven grains of quinia. In thirty minutes, patient complained of strong bearing-down pain. Uterine walls hardened, dilatation was completed, and in one hour and a half delivery was completed.

One very remarkable feature Dr. Stafford finds presents itself in the administration of quinia in obstetrical cases. It does not produce that *spasmodic* uterine contraction which, in his hands at least, so frequently follows the giving of ergot; also an unusual freedom from flooding; the entire placental mass is dislodged with but little difficulty, the uterus contracts firmly, presenting that hard, woody feeling which is so pleasing to the careful obstetrician.

In all his cases, the mothers convalesced well. General nervous prostration did not ensue to so great an extent as we frequently observe. Lochial discharges were normal, and there was a marked freeness from malarial difficulties, puerperal fever, chills, etc., which are so prevalent in the Mississippi Valley.

Sulphuric Acid in the Treatment of Boils.—Dr. Madison Marsh, of Port Hudson, La., says, in the *Medical and Surgical Reporter*, that boils and other analogous affections are treated by him with sulphuric acid, which he regards as almost a specific. He has used the acid with constant success for five-and-twenty years. "As soon as the patient applies for relief," he says, "I put an adult on elixir vitriol, 20 drops three times a day, in a glass of sweetened water, one hour before meals, previously smearing the teeth well with fresh butter or chewing a piece of fat pork, for a sure protection to the teeth. This is much better than sucking through a quill, as there is in this way regurgitation enough to throw the acid forward on to the teeth. Using the butter or pork is a perfect protection, if the teeth are subsequently washed with a solution of bicarb. soda, a heaping teaspoonful to a glass of water. In the use of sulphuric acid in this way, the boil (or crop) then on hand will soon melt away, and there will be but one effort more to return before they will finally disappear, no more to reappear. The acid should be kept up in ten-drop doses for at least two weeks after the boils have disappeared. To assist in their local treatment, to effect a speedy cure and afford relief from pain and soreness, I apply a piece of common adhesive plaster, cut

round, sufficiently large to cover the tumor to the extent of the areola, clipping the edges so that it will set smooth; or a little shoemaker's wax spread on a cloth will do just as well. I have made this application to saddle boils, and next day rode in the saddle very comfortably, the boil progressing to maturity with very little pain, and sometimes effecting an abortion at once.

"In this connection I have read in your *Periscope* a very interesting and scientific article on the sulphides of soda, potash and calcium, as an antidote for all these ills of humanity. And now, right here let me suggest, perhaps the chemical play of affinities in nature's chemical laboratory may evolve the sulphides in the same way that chloral amateurs claim that hydrate chloral is metamorphosed in the blood to chloroform."

MATERIA MEDICA.

SALICYLIC ACID.

At the late meeting of the Medical Society of the State of New York Dr. Edward R. Squibb, of Brooklyn, read a valuable paper on this substance which is attracting so much attention just at present, and from the pamphlet copy which we have received we extract the following:—

"Salicin is a glucoside, or neutral vegetable principle discovered by Leroux* in 1830, in the bark of some species of willow, Salix, whence its name. It was afterwards found in various species of poplar,† and in other trees and plants. Salicin was chiefly investigated by Piria,‡ who gave an elaborate account of its derivatives, and among these, of salicylic acid. Early in its history the acid was prepared by Löwig and Weidman § from the flowers of Spiræa ulmaria; and later, a research by Prof. Procter,‖ of Philadelphia, showed that our oil of wintergreen, Gaultheria procumbens, was really a salicylous ether; and from this source salicylic acid was obtained by Cahours.¶ Gerhardt,** Ettling,†† and others contributed to the researches by which the properties and reactions of salicylic acid were accurately determined and its composition fixed; but as yet it was but a chemical curiosity whose potential possibilities were quite unknown. It still belonged to that class of substances which had simply consumed a large amount of patient labor, and in relation to which the rigid utilitarian asked Michael Faraday, 'What is the use of such things?' and received for reply the answer, 'What is the use of a baby?'

"The physiological and pathological effects of salicin, though im-

* Journ, de Chim. Med., T. 6, F. 341.
† Braconnot. Ann. Chim. Phys., T. 44, F. 296.
‡ Piria, 1, Compt. Rend. T. 6, F. 388, and Ann. Pharm. T. 30, F. 165.
§ Jour. pr. Chem. Bd. 19, S. 236.
‖ Amer. Journ. Pharm., v. 14, p. 211.
¶ Compt. Rend., T. 16, F. 863.
** N. Ann. Chim. Phys., T. 7, F. 217.
†† Ann. Pharm., T. 53, F. 77.

perfectly investigated, seem to have gradually and slowly directed attention to those of its derivatives, and occasional paragraphs have appeared in current scientific literature, from time to time, upon salicylic acid for some years past. But only within a year or two—and the writer regrets that he does not know by whom first—German writers have alluded to its peculiar and powerful effects as an antiferment and antiseptic. As its peculiar powers were recognized, and its importance became possible and probable, the sources from which it had been obtained as a chemical curiosity became impracticable, in consequence of the small quantity which could be obtained from them, and the great cost in material and labor.

"The next step in the progress of salicylic acid toward practical utility affords an excellent illustration of the progress in chemical knowledge made of late years.

"The modern chemist appears to know, within certain limits, the combinations of the elements in organic substances very much as he knows the axes of crystals, and hence deduces their planes of cleavage. That is, he knows how they will split up under given conditions, and what new arrangements of their elements are possible or even practicable. And further, he knows by pure reasoning upon facts, what new elements to introduce between the molecules of one combination to split it up by a new set of affinities into new combinations never before seen or reached, and which would have remained long unknown under the mere empirical researches of the older chemistry. The peculiar properties and reactions of salicylic acid as an antiferment producing a demand for it, the German chemists, Kolbe* and Lautemann, sought for an organic compound which from its elementary composition might be split, or dissociated into the desired new compound salicylic acid. This substance, whose molecule might be broken up, they found in Phenol, or the so-called Carbolic Acid, and it is a very curious circumstance—purely accidental so far as this writer knows—that a substance of well and long established character as an antiferment, should have offered to these chemists a molecular constitution so well adapted to be broken up into a still more powerful antiferment; for there is no relation whatever, either in composition, or chemical, or physical properties, between carbolic acid and salicylic acid, except in their effects as antiferments, and the two may, so far as present knowledge extends, accomplish these effects by similar, or by altogether different reactions. The agent which the German

* Archiv der Pharmacie (3) v. 5, p. 445, from Jour. für Practische Chemie, Bd. 10, S. 89, and quoted in Ding. Polyt. Journ. Bd. 214, S. 132, and in Pharm. Jour. and Trans. of London, Third series, No. 231.

chemists selected to resolve the molecule of Phenol into other molecules, one of which should be salicylic acid, was dry carbonic acid or carbonic anhydride, as it is called in the new chemistry. Thus from the action of carbonic acid on carbolic acid, salicylic acid is produced; a process which is about as far from the original willow tree as a source of the acid as can well be imagined, and yet a process which is as much the result of human knowledge based upon human research as that by which Le Verrier and Adams discovered the planet Neptune. It appears that where Phenol or Cresol, and perhaps others of the class of phenols, are combined with an alkali metal such as sodium or potassium, thus forming phenol-sodium (often called phenate of soda) for example, and well dried carbonic anhydride is passed through the dry powder of phenol sodium heated to 100° to 250° C.= 212° to 482° F., the reaction occurs which produces salicylate of sodium and other compounds. The salicylate of sodium thus formed is dissolved in water and decomposed by hydrochloric acid which uniting with the sodium by superior affinity sets free the salicylic acid in the form of small crystals. These crystals are washed and recrystallized from a hot solution, and when dried form a crystalline powder of a light brown color, somewhat resembling in color the powder of pale cinchona bark. This is unbleached salicylic acid and is probably pure enough for almost all, if not for all the purposes to which the acid is at present applied to practical uses. The small proportion of coloring matter which it contains in this condition is held by it with great tenacity, and the further processes by which it may be obtained of various shades up to whiteness are so difficult, troublesome, and expensive, that they more than double the cost of production. This bleaching may be accomplished in various ways to a certain extent, but to get the acid quite white, Kolbe recommends that it be converted into an ether, and this ether be again decomposed. In the writer's practice no good plan of decolorizing has yet been reached, and as the decolorizing has not yet been shown to be necessary or very useful, no great attention has yet been given to it. The acid imported from Germany at very high prices is occasionally quite white; but most of that sold at the more moderate prices of two to three dollars per ounce is of various degrees of whiteness, up to a very light cream color with a reddish tinge. These varying shades of color seem to show that bleaching processes, more or less effective, have been used with all the acid yet imported into this country; while, so far as known, none has been made here until the writer lately undertook it. Hence the entirely natural, or entirely unbleached acid has not, so far as known, been yet used to any considerable extent; and it is a mere reasoning process based upon the quantity and qualities of the coloring matter

in the well-made unbleached acid by which it is inferred that for most, if not for all of its present uses, this is as good as the more or less bleached product. If the well-made unbleached acid be found to subserve all the useful purposes to which the substance may be applicable, as is confidently expected by this writer; and if the substance should even in moderate degree realize the expectations of its importance in the arts, and in medicine, as indicated by the European authorities, the process of Kolbe will make it practically attainable in the necessary quantities at a far lower cost; whilst without some such process it would be of very limited use to mankind, whatever might be its powers. Whether bleached or unbleached, the acid is in minute broken acicular crystals, which give it the appearance of a granular powder, soft and smooth under the pestle or knife, but somewhat rough or resinous when rubbed between the fingers. This powder is odorless and nearly tasteless. It has, however, a sweetish and astringent aftertaste with slight acridity in the fauces, but none in the mouth; and though tasteless, it leaves a disposition or inclination to expectorate which continues for some time.

"It is practically insoluble in cold water, but is very soluble in hot water; and the water of a hot solution retains when cold, in proportion to its coldness, from about one part in two hundred and fifty, to one part in five hundred of the solution. The presence of various neutral salts in small proportion in the water renders it far more soluble. Up to this time phosphate of sodium seems to have been chiefly used in Germany* to render it more soluble in water for medicinal purposes, and it is said that three parts of phosphate of sodium will render one part of the acid easily soluble in fifty parts of water. It is much more soluble in alcohol and ether than in water. It melts at about 125°C.=257°F., and sublimes at about 200°C.=392°F.† In common with other similar acids it forms salts with the principal bases, but these seem thus far to be difficult to make, and their effects have not been investigated."

From other sources we are in receipt of accounts of trials that are being made with the remedy; German experimenters being as yet the most occupied with the investigation of its merits.

If heated rapidly it is resolved into carbonic acid and phenol. Under slow heat it sublimates without decomposition. The composition and qualities of this acid led Professor Kolbe to infer, what has since been found to be true by Professors Knapp, Neugebauer, Thiersch, and others, that salicylic acid possesses valuable antiseptic qualities as a pre-

* Thiersch. Pharm. Centralhalle, Oct. 22, Nov. 5.
† Watts' Chem. Dictionary, Art. "Salicylic Acid."

ventive of fermentation and putrefaction. In many respects, salicylic acid is, it is stated, preferable to carbolic acid, from its absence of smell and its not unpleasant taste. It is applicable for either external or internal use, in rather large doses, without injurious effects; and it has been beneficially employed in surgical cases. The great value of the acid will be its preservative effects on provisions of every description,—a purpose to which carbolic acid is unsuited. Professor Neugebauer's experiments showed that a small quantity of salicylic acid was not only sufficient to prevent the second after-fermentation of wine, and the consequent muddiness which this produces, but that it also prevented the formation of fungi in the casks. Professor Kolbe's experiments proved that half a *gramme* of the acid was sufficient to prevent the fermentation produced by five *grammes* of yeast in a solution of one hundred and twenty *grammes* of sugar dissolved in one *litre* of water. From these data a fair estimate of the quantity to be used for the preservation of champagne, beer and syrups intended for exportation, can be formed. Another important use which Professor Kolbe suggests is its application to the prevention of decomposition of water on board ship, by the action of the acid in the proportion of $\frac{1}{2000}$, by covering the bung-hole of the cask with cotton-wool steeped in salicylic acid; the preservation would be effected by the filtration of the air. Provisions could also be preserved by the application of the acid on the surface. It was found that the process of curdling in milk was retarded for thirty-six hours by the addition of 6·04 per cent. of salicylic acid. These effects were obtained from free salicylic acid, and not from any of its salts. Professor Kolbe suggests, also, that the acid is peculiarly adapted for use as a toilet requisite for dentifrices, and as a preventive of the disagreeable odor caused by fœtid perspiration, without producing any injurious effects. For the still more important purposes of surgical dressing, Professor Thiersch and Dr. Fehling, who have used it somewhat extensively, report that it arrests the smell of putrefaction without producing any appreciable inflammation; and that a solution of one part of salicylic acid, three of phosphate of soda, and fifty of water, will promote the growth of skin over granulating surfaces. In surgical operations, a spray of acid and water, in the proportion of one to three hundred, has been used, and the wound dressed with wadding soaked in the solution.

In the Lying-in Hospital at Leipsic salicylic acid has been used since July last, instead of carbolic in vaginal diseases and in dressing puerperal ulcers, in solution of one part in three hundred or one part in nine hundred, or as a powder mixed with starch in the proportion of one to five. As the acid is soluble in fatty oils, it can be used, like

carbolic, for Lister's dressings. Its use internally has been suggested for those diseases which are contracted from contagion.

It is further suggested that experiments should be undertaken with the acid to determine whether and in what quantity of larger or lesser doses it will influence scarlet fever, diphtheria eruptions, syphilis, dysentery, typhus, cholera, etc.; and whether it may be used against pyæmia and the bite of dogs; also whether it may not be used advantageously among horses, cattle, and sheep to prevent glanders, foot-rot, mortification, and so forth.

Kolbe, to prove the innocuousness of salicylic acid, took for several consecutive days half a gramme (seven and a half grains) daily in water, one part to one thousand, without the slightest observable unpleasant effect. After an interval of eight days he took for five consecutive days one gramme (fifteen and a half grains) daily, and then for two days one and a half grammes (twenty-three grains) in alcohol each day. The digestion was perfectly normal; no trace of salicylic acid could be found in the urine or fæces. (The test is perchloride of iron, which gives an intense violet color.) At no time was there the slightest discomfort.

The experiment was repeated by Professor Kolbe and eight of his students, all at the same time. Each took on the first day one gramme, and on the second day one and a quarter grammes, of salicylic acid. Not one of them was able to observe the slightest derangement of any organs.

Professor Wunderlich, of the University Hospital, Leipsic, recommends a medicinal preparation of salicylic acid for internal use, consisting of—

Acid salicylici	1	gramme.
Olei amygdalæ dulcis	20	grammes.
Gummi Arabici	10	"
Syrupi amygdalæ	25	"
Aquæ florum aurantii	45	"

Kolbe proved by experiment in the bath that the salicylic acid is very little if at all absorbed through the skin.

C. Neubauer (a pupil of Professor Kolbe) has experimented with salicylic acid to determine the quantity necessary to arrest fermentation in solutions of sugar and new wine. He found that one gramme of salicylic acid is adequate to make 0.98 gramme of press yeast (weighed dry) in ten litres (about ten quarts) of new wine incapable of fermentation.

Dr. Ludwig Letzeritz has lately tested the effects of salicylic acid on bacteria and micrococci, by placing under the microscope portions of

fluid containing these organisms in abundance, and allowing solutions of salicylic acid to come in contact with them. He used solutions of four degrees of strength, viz., one part of salicylic acid and one of spirits in one hundred and twenty, ninety, sixty, and forty parts of water. The first two arrested the movements of the bacteria gradually; while with the two stronger solutions the arrest of movements was instantaneous. He has used salicylic acid locally and internally in two cases of diphtheria, he thinks with good effect.

COUMARINE.

This fragrant resinous principle is very widely diffused in the vegetable kingdom. Unlike most others, it is not confined to any particular species, or even to any special natural family. In the form of vapor it rapidly diffuses itself through the atmosphere, and in this state has a powerful effect upon the brain of many persons. It is supposed, not without good foundation, to be the chief cause of hay fever. It occurs abundantly in two of our common British plants, viz., *Anthoxanthum odoratum*, a graminaceous species, and *Melilotus officinalis*, a leguminous plant. The first-named is a grass abundant in most pasture fields, and the chief ingredient in hay. When the hay grass is drying in the meadows it gives out a peculiar fragrance, well-known as the scent of new-mown hay. The theory is, that it is this odor which causes the dreaded hay fever. I have noticed in wet or damp seasons the hay fever is almost unknown, but makes its appearance most commonly in dry, hot weather, when the coumarine is readily taken up by the hot surrounding atmosphere. I have also observed that, if a large bundle of the melilot is taken into a dwelling-house and allowed to dry, as it is sometimes in the houses of our village herbalists, it will cause some of the inmates to be prostrated by what is supposed to be a mild form of influenza, but what is in reality the hay fever.

As stated above, coumarine is found in many plants; and, strange to say, most of the species in which it occurs are very peculiar plants, unlike others of the same natural order. Thus, the *Anthoxanthum odoratum*, which is now placed amongst the Graminæ, is different from all other known British grasses, in that it is diandrous; all our other grasses are triandrous. Linnæus placed it with the "Diandria trygynio." Coumarine also occurs in the tonquin bean (*Dipterix odorata*), which is a large tree of Cayenne, belonging to the Leguminosæ, but differing widely from all the plants of this large family by having a drupaceous fruit, the calyx two-lipped, the upper lip consist-

ing of two large lobes spreading like wings, the stamens united in a sheath, split on the upper side. The Faham tea plant of the Mauritius (*Angræcum fragrans*), an orchidaceous plant, yields coumarine, and here again the flowers are of an extraordinary shape. The sweet-scented woodruff (*Asperula odorata*) is another source. This plant belongs to the Rubiaceæ, but differs from many of the allied species in not having rough or spiny leaves and stems. Its fragrant perfume often leads village people to dry the sweet-scented woodruff, and to place some with their Sunday clothes. Formerly it was used to scent tea.

We therefore find coumarine in the following natural orders:—Rubiaceæ, Orchidaceæ, Graminæ and Leguminosæ. It is interesting to observe that the same odorous principle which has secured such sentimental fame for our hay-fields is employed to scent snuff, give the agreeable odor to sachets, and to flavor tea and cheese, though each time extracted from a different species. Snuff is scented by powdered tonquin beans; and the celebrated Switz cheese or Schabzieger cheese is flavored with coumarine, imparted by the blue melilot (*Melilotus cærula*). Other kinds of cheese are also flavored with the melilot.

Coumarine, or the camphor or stearoptene of the tonquin bean, is a concrete essence, the formula, $C_{18}H_6O_4$. By the addition of potash it is changed into cumaric acid ($C_{45}H_7O_3HO$); this afterwards changes into salicylic acid ($C_{18}H_6O_4$). By using hot nitric acid it is converted into nitro-picric acid; on the other hand, if pure cold nitric acid be employed, a white crystalline solid is produced, represented by the formula $C_{18}\left\{\begin{matrix}H_5\\NO_4\end{matrix}\right\}O_4$. Yellow crystals are produced by a combination with chloride of antimony, and make a pretty polariscopic object. The most interesting chemical compound formed with coumarine is salicylic acid.

Coumarine is increasing in favor as a perfume, and will become exceedingly valuable as a commercial product. At present the chief source is the tonquin bean. The finest quality of the bean can be purchased for about three shillings per pound; it might, therefore, be profitable for a chemist to endeavor to produce it from one of our native species. The *Anthoxanthum* would yield it quite as pure as the tonquin bean, and, so far as the perfumer is concerned, it can be used in the raw state to make the spirituous perfume commonly known as "new-mown hay" just as well as from the bean. Our homœopathic friends are preparing tinctures, pilules, and globules from the dried flower heads, of course first prepared as a strong tincture with alcohol.

I believe, however, the *Melilotus officinalis* would yield coumarine

in a much purer form than even the sweet vernal grass, although not in as large quantity. Considered from any standpoint, it is worth a trial, for any quantity of the dried herbs could be procured at a very cheap rate.—*Chemist and Druggist.*

THE WILD VANILLA PLANT.

By vanilla plant we do not refer to the orchid which furnishes vanilla, but to the hardy North American plant, *Liatris odoratissima*, which, on account of a similarity of odor, has received that name. Most of the species of liatris, or button snake-root, have a tuber-like root, and long straight stems, upon which the numerous flower-heads are crowded in a close spike. In *L. odoratissima*, the root-leaves are from 8 to 12 inches long by 2 or 3 broad; those of the stem very small. The stem divides above into a broad branching panicle of purple flowers which make the plant an attractive one. A correspondent of the *American Agriculturist* has furnished the following account of the plant: "The wild vanilla, or, as it is commonly called, hound's tongue, or deer tongue, grows abundantly on the edges of what are called 'bays,' *i.e.*, low places in the pine woods, which are partially covered with water and overgrown with bays (a species of magnolia), or on low swampy pine woods in east and south Florida, or in portions of Lower Georgia. The fresh leaf has, when crushed, a greenish disagreeable odor, but when pulled from the plant and dried in the shade for a day or so, it becomes highly fragrant, having a smell resembling vanilla or tonka bean, and similar to the sweet-scented vernal grass, but much stronger. This odor is developed by some chemical change made in the leaf during the process of drying, whereby a peculiar principle known as coumarin is formed. Coumarin is found abundantly in the tonka bean of commerce, but so abundant is it in the *Liatris*, that it is often found in large quantities on the upper portions of a mass of semi-dried leaves. It is readily sublimed by a low degree of heat (150°), and the heat generated in these masses or bundles is sufficient to sublimate it on the upper or cooler layer. When found in this way, coumarin is composed of snow-white needle-shaped crystals, exceedingly fragrant—a leaf of the *Liatris* often being covered on its under side, and looking as though it had been out all night in cold, frosty weather. The dried leaves furnish an article of commerce, and one that is steadily growing in importance. It is gathered all through east and south Florida, principally on the St. John's River and its tributaries, and sold to the country store-keepers in exchange for goods; by these store-keepers it is sent to the balers and packers, by whom it is sent to New York for home use and exportation. Pilatka, on the St.

John's River, is the head-quarters in this trade. One may often see 75 to 100 bales, of 200 lbs. each, lying on the wharves, awaiting shipment—one dealer at this place having an order to fill of 150,000 lbs. Adults can gather from 150 to 400 lbs. of the green leaves in a day; active boys and girls nearly as much. The green leaves are taken home and dried in the shade, and lose about 80 or 85 per cent.; they are, when dried, sold at the country stores for from 3 to 6 cents per lb., yielding quite a good return for the labor. The packer bales and ships, and realizes from 8 to 12½ cents per lb. The dried leaves are used to give a flavor to cigars, snuff, and smoking tobacco. For cigars, it is sufficient to place the leaves and the cigars in alternate layers in a box, and allow the whole to remain together for several days; for snuff, the leaves are dried, ground, and mixed; it is granulated, or shredded up, and mixed with smoking tobacco. A small quantity is sufficient to flavor a large mass of tobacco. The odor is given off much more intensely on a damp day than on a dry one. Although large quantities of these leaves are consumed in our home factories, a much larger quantity is shipped to Germany and France direct, where it is rapidly growing in favor. It is quite probable that it will soon be an article used extensively in perfumery; and as it is known to keep 'the wicked moth away,' it will be in great demand for the purpose in the stead of the strong-smelling camphor and tobacco stems.—*Canadian Pharm. Jour.*, from *The Garden.*

Artificial Vanillin.—Among the important achievements in organic synthesis is the production, artificially, of the aromatic principle of the vanilla bean. A glocoside, first discovered by Hartig, in the juice of the European larch, has been found to exist in most plants of the natural family of coniferæ, and hence has been named coniferin. When this is acted upon by a mixture of potassium, bichromate, and sulphuric acid, it yields a crystalline substance, which possesses in a high degree the odor and taste of vanilla, and is, in fact, identical with the odorous principle, vanillin, vanillic acid, of the vanilla bean. It is said that the yield of this artificial vanillin, from a single pine tree, has a market value of about twenty dollars.

ON THE NATURE OF PROPYLAMINE AND TRIMETHYLAMINE.

Dr. W. H. Spencer contributes to *The Practitioner* of February an article on the properties of trimethylamine, and his experience of its effects in cases of rheumatism and gout.

"Twenty years ago Dr. Awenarius, a Russian physician, first used trimethylamine (under the name of *Propylamine*) in the treatment of rheumatism. He recorded two hundred and fifty successful cases, and looked upon the remedy as little less than specific. Since then much has been done on the continent to work out the action of trimethylamine on the physiological and clinical sides. The memoirs of Dujardin Beaumetz, Peltier, Cottard, Bonedit and Hambdy especially merit notice as giving, with much detail, all that Continental workers have yet made out about the properties of the remedy, and its therapeutical effects. Whatever may have been done in this country to test and verify what the Continental workers have set forth, and to carry on their work, nothing has been published. During the past eighteen months I have treated almost all the cases of rheumatism and some cases of gout that have come in my way at the Bristol Infirmary with trimethylamine in one or the other of its forms. I have records of a large number of cases, some analyses of urine and thermometric observations made during the treatments, and more observations made in comparison of this mode of treatment with other modes made in the same patient and in different cases."

"Wertheim, in 1850, prepared from narcotine a body having a formula C_3H_9N; he called it *metacitamine*. Anderson, in 1850, prepared from codeine a body having the same formula; he named it *propylamine*. Hoffmann, also in 1850, showed (from his own and Würtz's researches) that by the substitution of three molecules of methyl for the three hydrogen atoms of ammonia, a body was formed having the formula C_3H_9N; this body was, according to Hoffmann's nomenclature, trimethylamine. Wertheim soon after extracted from herring-brine a body isomeric with his metacitamine; thenceforward he adopted for both bodies the name propylamine. And now many chemists draw from many different sources, animal and vegetable (cod-liver oil, human urine, putrid calf's blood, guano, ergotine, chenopodium vulvaria and numerous other plants), a body having the formula C_3H_9N. Always this body was called propylamine; the substitution-body prepared artificially in the laboratory was, as yet, the only trimethalymine. Thus the reconciliation took place, and chemists (following up Würtz's and Hoffmann's researches) found that the body got from natural sources was not propylamine at all, but the same in all chemical respects as the artificial compound ammonia called trimethalymine. *Propylamine* is a primary compound ammonia (monamine). Trimethalymine is a tertiary compound ammonia (tri-amine). Thus:

$$\left.\begin{matrix}\text{Propyl}C_3H_7\\ H\\ H\end{matrix}\right\} N—C_3H_9N \text{ (Propylamine).}$$

$$\left.\begin{matrix}\text{Methyl } CH_3\\ CH_3\\ CH_3\end{matrix}\right\} N—C_3H_9N \text{ (Trimethalymine).}$$

Essentially the difference is in the radical; *propyl* is one thing, *methyl* is a different thing altogether. It is methyl that exists in the body extracted from narcotine, codeine, herring-brine, and all the natural sources already named; which exists, that is to say, in our new remedy for rheumatism. I do not know that propylamine has been obtained from natural sources at all. I believe it is as yet only an artificial product got by the treatment of the iodide of propyl with an alcoholic solution of ammonia.

"But more than that, the artificial propylamine differs from the named trimethalymine in these respects: it has a different odor, its boiling point is 49° C. instead of 9° C., and in its chemical reaction it gives results quite different to those of trimethalymine. The name propylamine should be discarded without delay for the substance now used medicinally; this is trimethalymine, or at least contains it. But what we use as a remedy is not purely and only that body which the formula C_3H_9N represents. No chemically pure trimethalymine has as yet been used in medicine, not even in the important physiological experiments of M. Hambdy. The substance used in medicine is the product known commercially as propylamine; this substance is obtained chiefly by distillation of herring-brine with potash or lime, and subsequent more or less repeated rectification. It is a mixture of trimethalymine (C_3H_9N), ammonia and ammoniacal compounds, all in solution in water. The amount of ammonia and organic impurity (chiefly animal oil) in the solution depends upon the greater or less completeness with which the process of rectification is carried out. If the brine is simply distilled with lime, and the products condensed in water, the resulting solution will contain much ammonia and impurity. If, on the other hand, the rectification is carried out fully, as in the process presently to be described, there results a tolerably uniform product containing only traces of ammonia and organic impurity. The composition of the commercial solutions, as might be suspected from this, has been found to vary greatly. Nor is this variation in composition due, even chiefly, to the mode of preparation. MM. Girardin and Marchand analyzed specimens of Scotch, Yarmouth, and Channel brines (*Jour. de Pharmacie et de Chimie*, 1860) during several years, and found not only that the composition and quality of the different brines varied greatly, but that the same brines varied in different years. M. Petit examined numerous specimens of commercial propylamine, not alone French, and found that the amounts of alkaline products in the solutions varied from two to fifty-five centi-

grammes in the gramme. Since these alkaline products readily expressed several ammoniacal compounds as well as trimethalymine, the quantity of this supposed essential ingredient must have been, in some of the specimens, extremely small. Within the past two years, however, the process of manufacture has been much improved. In the solutions now supplied for medicinal use, at least by our best manufacturers, constancy of composition and purity are very fairly attained. The solution I have used was supplied by Messrs. Ferris & Co., of Bristol. They inform me that the solution they sell is prepared solely from herring-brine, and by the following process:—the brine is distilled with soda-lime and the products condensed, the alkaline distillate is treated with hydrochloric acid and evaporated; the residue is treated with absolute alcohol, whereby ammonium chloride is separated; the alcohol is driven off, what remains is distilled with caustic lime or potash, and the products are condensed in cold water. The solution in water is usually sold as propylamine. But if rectification is pursued much further, the products are condensed in hydrochloric acid. The acid solution is evaporated to dryness, the residue treated with absolute alcohol, and again distilled with brine. This last process is repeated until the product is uniform. The solution supplied to me contains twenty per cent. of this final product. From careful consideration of this process, I conclude that the solution is a twenty per cent. solution of an alkaline product (expressed as trimethalymine) with traces of ammonia and organic compounds, not ammoniacal. The alkaline product contains trimethalymine and undetermined ammoniacal or other compounds. What may be the absolute proportions of trimethalymine (C_3 H_9 N) and other compounds in this alkaline product appear to be quite unknown. Constancy, as to the alkaline product, is certainly attained, but constancy as to the amount of trimethalymine in the product would seem still to depend on the quality of the original brines. With a view to avoid inconstancy and impurity in the commercial product, a salt of trimethalymine has been used in medicine instead of propylamine. This salt is called, according to the barbarous and corrupt nomenclature perpetuated by our pharmacopœias, hydrochlorate of trimethalymine. It is really a chloride of trimethalymine and is prepared, either by halting at a particular stage in the process of rectification of the propylamine solution, or synthetically from titramethylammonium iodide. In the former case the base is not simply the body represented by the formula C_3 H_9 N any more than the trimethalymine of the commercial propylamine is that body. It is, in fact, both in the chloride and commercial solution C_3 H_9 N with other compounds existing in herring-brine, all separated as chlorides during the process employed. The chloride is, of necessity, only an approximately

pure salt; it contains a notable quantity of ammonium chloride, the presence of which is essential to the stability of the salt in the solid form.

"Such being the state of the case as regards the chemistry of the product propylamine and the chloride of trimethalymine now used in medicine, the question arises, what in these may be the efficient cause of their effects? The effects may be due to the trimethalymine (C_3H_9N), or to the other ammoniacal compounds contained in the products, or perhaps to both. The effects of the synthetically-made chloride of trimethalymine could not be taken to settle the point, for a salt like a chloride is, in the body, a very different thing to a solution of the base. These two—the commercial product containing trimethalymine (C_3H_9N) with other ammoniacal compounds, and the chloride of trimethalymine—are clearly not interchangeable as remedies until it can be shown that their effects are precisely the same. The similarity of effects has not yet been shown. Again, the experience of the effects of the alkaline treatment of rheumatism, and I may say also of gout, can hardly go for nothing when seeking in the composition of a substance like propylamine a cause for any effect it may produce. I confess on my own part to a strong suspicion that the ammoniacal compounds will be found to take at any rate the larger share in the effects. It is clear that in estimating and comparing the therapeutic effects of the commercial propylamine, the variability in its composition must be taken into account. Much that has been anomalous in the experience of the remedy may possibly be accounted for if solutions varying greatly in compositions have been used. It is a first condition in therapeutic observations that the compositions of drugs should be referable to known standards. In the particular case, if this condition were fulfilled, a decision upon the absolute and relative values of propylamine, pure trimethalymine and the pure chloride could very soon be arrived at. Nor would it appear to be difficult to fulfil the condition. M. Würtz* has proposed a way of preparing trimethalymine artificially; the solution obtained by this process can be titrated, like any ordinary solution of ammonia, to a definite and constant standard. Many points might be soon cleared up if the the effects produced by such a solution were compared with the effects produced by a product obtained by distillation of herring-brine with lime or potash and not subjected to subsequent rectification.

"But the solution and the salt have generally been prescribed on the Continent in the form of mixture, the vehicle being aqua minthæ piperitæ, and aromatics being used to disguise the unpleasant taste. The

* Report to the Paris Pharmaceutical Society, March 9, 1873.

dose employed has varied much; it has ranged from nine to thirty minims for the solution, and has not exceeded ten minims for the salt. The chloride has been used in the form of a pill (made up with marshmallow, honey, and tolu), and the solution in the form of capsules. I have, except in two instances, invariably prescribed both trimethalymine and the chloride in the form of mixture, and my formula is this:—

℞ Trimethalymine..... ♏iv. vel ♏viij.
Syrupi zingiberis..... ʒj.
Aqua minthæ piperitæ..... ℥j.

Mix.

—*Talis fiat modus, secundâ quâque horâ sumendus.*

"And, as supporting the probability of variations in composition, I have at different times found that the same results were obtained with a dose of two minims as with a dose of eight minims. Now, I give always four to eight minims, at first every hour or two hours, increasing the interval as the pains diminish and the case progresses. When all pain is gone I cease to give the remedy, and substitute, in most cases, quinine. Rarely have I to re-exhibit the trimethalymine, but I do so if the pains recur."

THE ACTIVE PRINCIPLE OF SENNA.

New proofs have been furnished of the easy alterability of the active principle of senna, in several papers recently presented to the University of Dorpat.

The results of numerous and repeated experiments upon infusion of senna show conclusively that when an infusion of senna is evaporated in the air to the consistence of an extract, the product loses much of its therapeutic activity. If the extract so obtained be dissolved in a large quantity of water, and evaporated a second time, the extract obtained is inert.

The results, though contrary to those obtained by Heerlein (*Pharm. Cent. Blatt.*, 1851), and noticed in the *U. S. Dispensatory*, p. 772, seem to be abundantly proved.

The following results were obtained from the experiments made, and which are noticed in a recent number of the *Journal de Chimie et de Pharmacie.*

Alkalies rapidly alter the purgative principle of senna at the temperature of ebullition.

An infusion of senna in lime-water raised to a boiling temperature,

and the lime subsequently removed by carbonic acid, gave a liquid which was quite inert.

An infusion of senna, to which caustic potassa had been added, and raised to a temperature of 212°, was, after neutralization by an acid, likewise inert.

Mineral acids act with scarcely less energy. Vegetable acids exert only a feeble action.

The results of numerous experiments also show that the purgative principle of senna is insoluble in concentrated alcohol, for the alcoholic extract obtained was without purgative action. Cold water dissolves this principle very rapidly.

Senna treated by concentrated alcohol loses its taste and odor, but preserves its activity.

The use of senna previously exhausted by alcohol should become general; for the infusion prepared after exhaustion, being free from disagreeable taste, can be easily administered even to children, who take it, according to the above authority, without the slightest repugnance.

BENZOATE OF LITHIUM.

BY E. B. SHUTTLEWORTH.

This salt has been proposed as a remedy for certain disorders of the urinary organs, and appears to possess advantages over the forms in which lithium has heretofore been exhibited. The comparative insolubility of the carbonate has always proved a bar to its general employment, and though the citrate is, in this respect, much more eligible —only twenty-five parts of water being required for solution—yet the salt is of an unstable and deliquescent character, and somewhat troublesome to prepare and dispense. The benzoate is not open to any of these objections, and has the additional advantage of containing, in combination, an acid, which, is itself of no inconsiderable repute in the treatment of patients suffering from various forms of urinary deposits.

This salt is not usually to be met with in commerce, but is not difficult to prepare. I am not, however, aware of any work of reference which contains any directions or formula for this purpose, and am therefore induced to believe that a few remarks on the subject may prove acceptable.

Benzoate of lithium may be most advantageously prepared from the carbonate:

$$\underset{74}{L_2CO_3} + \underset{244}{2H_7CH_5O_2} = \underset{256}{2LC_7H_5O_2}$$

In a wedgewood dish put one ounce avoir. of the carbonate, mixed with nine ounces of water. Heat gently by aid of a spirit lamp, and add gradually, and by small portions, benzoic acid, until effervescence is no longer produced. About three and a quarter ounces will be required. Evaporate to dryness, stirring constantly, and reducing the heat towards the close of the operation. The product may, for convenience, be powdered. The yield will be nearly three and a half ounces.

By following this process a much less quantity of water, and consequently less evaporation, will be needed than if the benzoic acid be dissolved and the carbonate added thereto. If, by reason of impurity or discoloration of the benzoic acid, it is necessary to filter the solution, three ounces more of water may be added before evaporation; and if required, a little purified animal charcoal may be used. The benzoate may be obtained in crystals by withdrawing the heat and setting the solution aside immediately after the benzoic acid is all added.

Watts * says the lithium salt of benzoic acid is uncrystallizable. This is incorrect; the benzoate may be crystallized without the slightest difficulty. It takes the form of glistening, pearly scales, or laminæ, somewhat resembles iodide of cadmium, but less lustrous. The crystals feel soapy or greasy to the touch; have a cool, sweetish, and not disagreeable taste, and are perfectly permanent in the air. The solution has an acid reaction.

I have found the salt to be soluble in three and a half parts of water at 60° F.; in two and a half parts at 212° F.; and in ten parts of cold alcohol, sp. gr. 838.

BENZOATE OF IRON AND COD-LIVER OIL.

The *Pharmaceutische Central Halle* contains the following:—Cod-liver oil combined with the benzoate of iron is one of the ferrous combinations which is soluble in the fatty oils. According to former experiments it has been proven that the benzoate is preferable to most of the other forms of iron, not only on account of its solubility, but also for having a less nauseous taste, which so strongly characterizes most of the cod-liver oils impregnated with iron in different ways.

The solubility of the benzoate of iron in cod-liver oil is dependent chiefly upon the amount of free fatty acids and gally constituents contained in the oil, and the solubility is still greater by digestion at an increased temperature. A very convenient solution, adapted for most of the requirements, is made by taking one part of the combined

* Dict. of Chem., p. 552.

iron to every 100 parts of oil. The largest quantity found soluble in 100 parts of an oil of good quality, and several years old, which did not show any turbidity by being kept in a cellar, was 1.63 parts. The same quantity of another, but fresh oil, dissolved 1.45 parts of the benzoate during a digestion of one day, and had formed a minute sediment after a fortnight, holding then in clear solution 1.2 parts of the iron salt.

Benzoate of iron may be prepared by a moist process in the following manner: 10 grammes of crystallized benzoic acid are dissolved in 200 cc. of distilled water, and to this is added 15 cc., or sufficient liquor of ammonia of 10 per cent., till after moderate digestion the liquid is rendered slightly ammoniacal. 11 grammes of the officinal solution of chloride of iron, spec. grav. 1.480, previously diluted with 200 cc. of hot distilled water, are next added to the liquid, and after stirring it is left to deposit in a cool place for a day, then decanted, and the residue again stirred with cold water and decanted as before. The remainder is washed in a filter, and sufficient water poured on it till the percolating liquid indicates but a minute reaction with nitrate of silver. The precipitate is dried on bibulous paper, pulverized, and again subjected to drying at a temperature of 40° C. for a day, and at last preserved in a well-stoppered bottle protected from the light. The weight of it will be 12 grammes. In order to prepare the ferrated oil, it is necessary to use the perfectly dry salt; of this 10.5 grammes finely pulverized are triturated with 4 grammes of the oil. After repeated shaking for several days, it is set aside to deposit, and the supernatant brown liquid poured off. The residue is filtered through previously dried paper. To retain the original taste of this preparation, it should not be exposed to the light, as otherwise it may become disagreeable to the palate.

TEST PAPERS.

BY F. MOHR.

For the preparation of litmus-paper, the author recommends that the litmus be washed with hot alcohol and then extracted with cold water. This extract may be brushed on one side of writing paper. The paper must be washed with water to remove free alkali or acid.

Turmeric root contains two yellow dyes, one soluble in water and unaffected by alkalies, the other soluble in alcohol. The roots should be washed in water as long as the washings are colored, and then exhausted with alcohol.

Paper soaked in potassium sulphocyanide or ferrocyanide may be used for the detection of iron.

Paper containing starch, moistened with a solution of potassium iodate in oxalic acid, and dried, is turned blue by reducing agents, such as sulphurous acid, hyposulphites, sulphuretted hydrogen, potassium, sulphocyanate, ferrous oxide, cupric, chloride, potassium iodide, and similar bodies.

For oxidizing bodies, a starch paper with a potassium iodide may be used. To keep such paper unchanged, a lighted sulphur match should be held in the bottle in which the paper is preserved before closing it.

The author also recommends the following test papers:—For ammonia gas, paper soaked in mercurous oxide solution. For sulphuretted hydrogen and alkaline sulphides, acetate of lead paper, filtering paper soaked in cobalt chloride, polished visiting cards, known as "Polka paper," or paper painted with bismark white. For metals which give black precipitates with sulphuretted hydrogen in acid solution, washed sulphide of zinc precipitated from the acetate is smeared on writing paper and dried. Any mineral acid decomposes the sulphide of zinc, setting free sulphuretted hydrogen, which immediately precipitates the metals present.

The same author further says, regarding the use of litmus, that the violet tint assumed by it in the titration of solutions which do not contain carbonate is due to the carbonic acid contained in the litmus itself. If this be expelled by acidifying with dilute sulphuric acid and then boiling for some time, the litmus, after treatment with baryta water, changes from blue to red without any intermediate violet. In titration with litmus, if the final color is to be blue, blue litmus should be added first; if red, the red solution must be used. In this way, all errors from the litmus itself may be avoided.

THE MECHANICAL PRODUCTION OF OXYGEN GAS.

According to Graham, the proportion of oxygen in atmospheric air can be increased by means of dialysis from the normal 21 per cent. to that of 42 per cent. By means of an air-pump atmospheric air is caused to traverse a kind of air cushion, whose inner wall is lined with flannel and a thin caoutchouc membrane. The oxygen passes through the membrane more rapidly than the nitrogen, and therefore the dialized gas becomes richer in oxygen. Graham assumes that the gas condenses on the surface of the membrane, becomes liquefied, and

thus penetrates the membrane, being again vaporized as it reaches the other side.

The latest and most ingenious method, patented by Mallet, is founded, firstly, on the different solubilities of oxygen and nitrogen in water. One volume of water dissolves only 25·1000 nitrogen to 46·1000 oxygen. When these gases are mixed, as, for instance, in atmospheric air, the respective solubilities remain the same, but these must be multiplied by the tension of each gas in the mixture:

$$0{\cdot}79 \times 0{\cdot}025 = 0{\cdot}0197 = 0{\cdot}67$$
$$0{\cdot}21 \times 9{\cdot}046 = 0{\cdot}0097 = 0{\cdot}33$$

which is, in fact, the composition of atmospheric air dissolved in water, as determined by analysis. Secondly, it is based upon the fact that water holding atmospheric air in solution, when coming in contact with oxygen, parts with the absorbed nitrogen, and takes the oxygen in its place. If now, by means of a suitable apparatus, atmospheric air is forced into water, nitrogen and oxygen are dissolved in the proportion of 67 to 33. This solution, by continued pressure upon the unabsorbed air will take still more oxygen from this and give nitrogen in exchange. Upon the removal of the unabsorbed gas, which is now rich in nitrogen, and the abatement of the pressure, the dissolved gas escapes from the water. By treating this six or eight times more in a similar manner, a gas containing 0·973 of oxygen can be obtained.

According to De Laire and Montmagnon, charcoal absorbs 985 times its volume of oxygen, and only 705 times its volume of nitrogen; and as it seems that the oxygen, absorbed by freshly burnt sponge, passes into the ozone form by reason of the traces of iodides and bromides present, these agents may become highly useful pulverulent oxygen-bearing vehicles.

PURIFICATION OF OLEIC ACID FOR THE PREPARATION OF OLEATE OF MERCURY.

Much difficulty has been experienced in preparing the oleate of mercury from commercial oleic acid. The acid met with in the market is an exceedingly impure article, obtained as a by-product in the preparation of stearic acid. The fats from which it was originally procured are often in a most offensive condition, and the acid is itself rarely free from a disagreeable, rancid odor. From careless exposure to the air it is generally oxidized to a very considerable extent, exhibiting a dark color, and containing a large portion of oxyoleic acid. It contains, also, generally an important amount of stearic acid, as indicated by its partial solidification at moderately low temperatures.

For preparing the oleate of mercury and certain other oleates for medicinal use, a pure oleic acid alone is admissible. This may be prepared by a process described in various text-books of chemistry, and published some months ago in the *American Journal of Pharmacy*. Almond oil is first completely saponified by means of potassa. The soap is then decomposed by tartaric acid, the product washed carefully, mixed with half its weight of finely powdered oxide of lead, and heated for several hours on the water-bath. The impure oleate of lead thus formed is mixed with about three times its volume of ether, allowed to settle, and the clear solution of oleate of lead decanted, and agitated briskly with an excess of dilute hydrochloric acid. The oleic acid is thus set free, and remains dissolved in the ether, which rises to the surface. The ethereal solution is finally decanted, washed with water, and freed from the ether by distillation.

Ernest C. Saunders proposes a modification of this method, employing, as a source of the acid, white Castile soap, which he decomposes by boiling with about one-third of its weight of tartaric acid. The crude product contains about eighty-seven per cent. of oleic acid, and is purified by the method described above. It is essential, of course, that the soap be of prime quality, made from pure and fresh olive oil. There is no apparent reason why tartaric acid should be used in preference to the cheaper mineral acids in decomposing the soap, either in this process or in that first described.

Another method suggests itself as still more simple, at least in theory, although it has not been put to the proof of actual experiment. It consists in saponifying olive oil at once with litharge, as in the officinal process for preparing lead plaster and treating the oleo-stearate of lead with ether, as in the process described above.

In a paper read before the American Pharmaceutical Association, at its last meeting, by Charles Rice, of New York, the following process for purifying oleic acid was recommended as the simplest and best:

Take of commercial oleic acid ("red oil") any convenient quantity. Expose it repeatedly to a temperature of about 45° F., and express the liquid portion.

Mix this with an equal bulk of sulphurous acid solution, place it in the light, and shake it frequently till no more color is discharged. A crude acid, which was prepared from clear and fresh fats, and collected as the first run from the hydraulic press, before the pressure had been raised high, will discharge nearly all its color; generally, however, the acid is of a light straw color. Finally, the oleic acid is to be separated, washed repeatedly with cold, distilled water, and put into bottles, which should be kept full, and in a cool place. Oleic acid thus prepared dissolves metallic oxides readily and completely, and

mercuric oxide without reduction. Solution should be made at ordinary temperatures, since experience has shown that all heating is injurious.

The mercuric oxide used should be *thoroughly dry*, and sifted in small portions at a time, upon the surface of the oleic acid, each fresh portion being well incorporated before another is added.

New Methods of preserving Ergot of Rye.—Mr. Amici Lingi proposes to macerate the ergot for several hours in the following solution:—

Distilled water	95 parts.
Alcohol	5 "
Chloral hydrate	10 "

Afterwards spread the ergot out on the blotting paper, and dry in the shade. If decomposition has already commenced, a somewhat longer immersion will suffice to arrest it.

An apparently better method is recommended by M. Ducroe in the *Journal de Chimie Médicale.* The author says he has proved its excellence by an experience of forty years. It consists simply in keeping the ergot in a well-stoppered bottle, in a dry place, and always covered with finely powdered wood charcoal. The charcoal of oak or pine is the most suitable.

Wafers for Administering Powders.—At a meeting of the Academy of Medicine of Paris, a committee reported as follows upon a method, proposed by M. Limousin, for the administration of remedies:

Practitioners who prescribe, and above all patients who have to take medicine in the form of powders, realize how difficult and disagreeable, sometimes almost impossible, is the administration thereof.

Medicines in the form of pills dry out and harden, often requiring a considerable number to obtain the desired result and gastric juice frequently rebels at the task of dissolving them.

Solutions communicate their taste, pungent, bitter, styptic, nauseous or otherwise intolerable, as the case may be; insoluble medicines, *i.e.*, suspended merely, have those noted inconveniences of adhering to the glass, spoon, mouth and palate, irritating the throat, often producing a cough that ejects the medicines violently through the mouth or nose.

To obviate these difficulties, wafers have been used to envelop the medicines, this is not effected, however, without considerable trouble and imperfection and at the risk of scattering and losing part of the dose. To overcome and remedy these objections, M. Limousin

has applied himself diligently and it appeared to the committee with success.

By his method the patient receives, already prepared for taking, a sort of lentil-shaped seal or flattened capsule, containing one dose of a powder; these flattened capsules are formed by firmly cementing two concave disks together at their edges so perfectly as not to lose a particle of the substance to be administered; this is done in a moment, facilitated by the aid of a press invented by M. Limousin for the purpose; the two concave parts thus form a double convex lentil-shaped vehicle, which is made of a similar substance that powder wafers are made of, not so brittle, however; there are three sizes, the smallest being the size of a nickel 5 cent piece, the medium the size of a silver quarter of a dollar, and the largest as large as an old copper cent. The largest size will or can contain 20–30 grains of a substance the gravity of powdered rhubarb or aloes.

This mode of administration recommends itself especially for bitter and nauseous medicines such as quinine, aloes, rhubarb, or ipecac, but it is also of great advantage for bromide or iodide of potassium, as also for heavy articles like calomel, that are usually left in the spoon or glass by the ordinary way of giving powders, and frequently no doubt the physician is thus disappointed.

The report closes by stating that the chairman of the committee has seen these capsules administered and taken them himself, and his patients and himself join in praising this agreeable mode of giving disagreeable medicines.

Extract of Litmus.—According to J. Martenson,* the coloring matter of litmus, when purified as much as possible, may be kept for an indefinite period unaltered in glycerine. Litmus is treated with hot water, and the solution, after concentration, is mixed with a sufficient quantity of alcohol (80 p. c.) to precipitate the coloring matter. After standing for twenty hours the alcohol is poured off, and carries with it a dirty blue foreign substance, which frequently occurs in litmus and is not altered by acids. The sediment is treated with hot water, which dissolves it, on account of the potassium carbonate which is present. To remove this carbonate, sulphuric acid is added till the liquid assumes a faint wine-red tint; it is then heated to boiling for a few minutes, and again rendered blue by the addition of a few drops of lime-water. After the lapse of twenty-four hours the liquid is filtered and evaporated to a syrup, and left all night in a cool place, when the potassium sulphate crystallizes out in the form of a crust.

* Journ. Chem. Soc., from Chem. Centr., 1874, 406.

It is then filtered through moist loose cotton, mixed with glycerine, and carefully preserved from damp.

Adulteration of Cane Sugar.—The manufacture of glucose from starch is growing rapidly in extent and importance abroad, and is already fairly established at home. Fine specimens of an article of American manufacture were recently exhibited at a pharmaceutical meeting in Philadelphia. The finest grades are made from wheat starch, and are quite white. It is stated that the glucose is employed largely by brewers as a substitute for malt.

The low price at which refined sugars are now sold suggest another explanation of the growing importance of this manufacture. The difference in price between raw and refined sugar is too small to allow any margin of profit to the refiner. Adulteration, therefore, must be practised, and chemical tests applied to the refined sugars show that glucose has been introduced into them in very considerable quantities. The quality of sugar is of course deteriorated just in proportion as its cost has been reduced, and the consumer is cheated besides, because he does not get what he pays for.

Testing for Grape Sugar in Solution of Cane Sugar.—Braun recommends to add caustic soda to the sugar solution, and heat to about 90° C., then add a few drops of picric acid and boil. Cane sugar has no effect on the picric acid solution, while grape sugar converts it into picramic acid, which has a reddish color in dilute solutions of grape sugar, and a deep blood red in more concentrated solutions. One drop of a concentrated aqueous solution of picric acid suffices for 20 cc. of solution to be tested; the whole may then be heated to boiling, and three drops of a moderately concentrated solution of soda added. Milk and fruit sugar produce the same reaction.

Critical Examination of Alcoholic Liquors.—Under this title Professor Albert B. Prescott, of the University of Michigan, has published a work in which he treats at length of alcoholic liquors and their common impurities and adulterations, together with directions for a chemical examination adapted to commercial, hygienic and legal purposes. According to Professor Prescott, the ordinary distilled liquors of commerce contain from thirty to forty-nine *per cent.* by weight of alcohol, fusel-oil in various proportions, from an ineffective trace to an amount sensibly affecting the properties of liquors; ether and volatile oils in very small quantities, slightly affecting the odor and taste, and water being the remainder of the liquor. Whiskey from malted grain contains least fusel-oil, and the

smoky odor, which is sometimes present, is obtained by the addition of a drop or two of creosote to the gallon of spirits. For color, burned sugar, logwood, catechu, tea infusion, and other articles are sometimes added. There is no evidence that strychnia has ever been used in the manufacture of whiskey, or other distilled liquors. Its addition would be an expensive measure, by lessening the market price of the beverage. Gin is grain spirit flavored with oil of juniper or oil of turpentine, or both. Among the additions to several favorite brands are oils of lemon, bitter almonds, caraway, cassia, sweet fennel, cardamoms, creosote, garlic, and horse-radish: potash is said to be sometimes added to give the piquancy prized by the lower orders of gin-drinkers in England, but it is seldom found by analysis. Cayenne pepper and sulphate of zinc are mentioned as additions by dealers, and sugar is frequently added in considerable quantity. Under the name of cordials are included a great number of artificial drinks, consisting of grain spirit somewhat diluted, with an endless variety of aromatics, usually heavily sweetened, and brightly colored, violet, green, blue, or of other fancy tint. Aniline colors, possibly containing arsenic, and other colors of doubtful safety, are liable to be used. In regard to the hygienic properties of pure alcohol, Professor Prescott gives little information, the purpose of his book being chemical rather than physiological.

SOME DRUGS BUT LITTLE KNOWN IN THE UNITED STATES.

It will be remembered that in the last number of New Remedies we noticed the new work by Messrs. Flückinger and Hanbury, called "Pharmacographia." Some drugs mentioned by them are so little known, and what the authors say about them is so interesting, that we have quoted the following brief extracts from their descriptions:

Coptis Root, or Mishmi Bitter, or Coptis Teeta, is a small herbaceous plant still but imperfectly known, indigenous to the Mishmi mountains, eastward of Assam. First described in 1836 by Wallich, under the name of Mahrnira, this drug has been used in Sinde for inflammation of the eyes, a circumstance which enables Pereira to identify it with a substance bearing a nearly similar designation mentioned by the early writers on medicine and previously regarded as the root of Chilidmium majus L. Under the names of Μαμιρὰς *Mamiran*, *Urk*, *Memeren*, *Mambroni chini*, etc., it has been mentioned by writers since the 7th century. The rhizome of the Coptis is used by the Chinese under the names *Hwang-lien* and *Chuen-lien*,

and has been introduced into the Pharmacopœia as a pure bitter tonic.

Radix Aconiti Heterophylli, Ateas, or Atees, is derived from a plant of one to three feet high, with a raceme of large flowers of a dull yellow veined with purple, or altogether blue, which grows at elevations of 8,000 to 13,000 feet in the temperate regions of the Western Himalaya. No ancient account of the drug has been met with, although it is said to have been long in use in India as a tonic and aphrodisiac. It has recently attracted some attention as an antiperiodic in form, and has been extensively prescribed by European physicians in India. In ordinary intermittents it may be given in twenty-grain doses of the powder. As a simple tonic the dose is five to ten grains three times a day.

Tinospera Cordifolia.—A lofty climbing shrub found throughout tropical India and called in Hindustani Gulancha. Its virtues appear to have long been familiar to Hindu physicians, and attracted the attention of Europeans in India at the early part of this century. The parts used are the stem, leaves, and root, which are given in decoction, infusion, or a sort of extract called pálo, in a variety of diseases attended by slight febrile symptoms. O'Shaughnessy and Warring declare the plant to be one of the most valuable in India, and that it has proved a very useful tonic. Gulancha was admitted to the Bengal Pharmacopœia of 1844, and to that of India in 1868. It is reputed to be tonic, antiperiodic and diuretic, and, according to Warring, is useful in mild forms of intermittent fever, in debility after fevers and other exhausting diseases, in secondary syphilitic affections, and chronic rheumatism.

Gynocardia Odorata is a large tree with a globular fruit of the size of a shaddock, containing numerous seeds immersed in pulp. It grows in the forests of the Malayan peninsula and Eastern India, as far north as Assam, extending thence along the base of the Himalaya westward to Sikkim. The seeds, called "Chaulmoogra" seeds have been admitted to the *Ph. Ind.*, and are said to have been advantageously used as an alterative tonic in scrofula, skin diseases and rheumatism. They should be freed from the testa, powdered and given in doses of six grains gradually increased. Reduced to a paste and mixed with simple cerate; also in the form of an expressed oil of the seeds, the remedy is used externally in herpes, tinea, etc.

Garcinia Indica is an elegant tree with drooping branches and dark green leaves. It bears a smooth, round fruit the size of a small

apple containing an acrid purple pulp in which are lodged as many as eight seeds. The concrete oil of Mangosteen, or Kokum butter, as it is called, is derived from the seeds and is found in the Indian bazaars in the form of egg-shaped or oblong lumps weighing about a quarter of a pound. It is a whitish substance, at ordinary temperature, firm, dry and friable, yet greasy to the touch. It is well suited to some pharmaceutical preparations, and might also be advantageously employed in candle-making, as it yields stearic acid in a purer state than tallow and most other fats. The supply, however, is quite limited.

Gurjun Balsam, or wood oil, is yielded by several trees of the genus *Dipterocarpus*. The gurjun tree is said by Hooker to be one of the most magnificent of the forests of Chittagong. Many individuals are upwards of two hundred feet in height and fifteen feet in girth. The balsam is procured by tapping the tree about the end of the dry season and is produced in extraordinary abundance, from thirty to forty gallons, according to Roxburgh, being sometimes obtained from a single tree in the course of a season. In medicine the balsam has hitherto been employed only as a substitute for copaiba, and chiefly in the hospitals of India. In the East its great use is as a natural varnish, either alone or combined with pigments; and also as a substitute for tar, as an application to the seams of boats, and for preserving timber from the attacks of the white ant.

Radix Toddaliæ, derived from *Toddalia aculeata*, a ramous, prickly bush, often climbing over the highest trees, common in the southern part of the Indian peninsula. The pungent, aromatic properties which pervade the plant, but especially the fresh root-bark, are well known to the natives of India. The bark is now recognized in the *Pharm. Ind.* It was once known in Europe as "The Root of Juan Lopez Pigneiro," and by Gaubinus was introduced into European medicine, in 1771, as a remedy for diarrhœa, acquiring a reputation which led to its admission to the *Pharm. Edinb.*, in 1792. The bark, rasped or scraped from the woody root, is used in India as a stimulating tonic.

Bela, Bael Fruit, or the Indian quince, is a large berry, two to four inches in diameter, derived from a tree found in most parts of the Indian Peninsula, where it is often planted in the neighborhood of temples. The interior is divided into ten or fifteen cells, each containing several woolly seeds, and consists of a mucilaginous pulp, which becomes very hard in drying. In the first state the fruit is very aromatic, and the juicy pulp has an agreeable flavor, so that

when mixed with water and sweetened it forms a palatable refrigerant drink. The bark of the stem and root, the flowers, and the expressed juice of the leaves are used in medicine by the natives of India. The fruit is held in high repute in India as a remedy for dysentery and diarrhœa; at the same time it is said to act as a laxative when constipation exists.

Nim Bark, or Margosa Bark, is derived from *melia indica*, an ornamental tree forty to fifty feet high. The hard and heavy wood, which is so bitter that no insect will attack it; the medicinal leaves and bark; the fruit, which affords an acrid bitter oil used in medicine and for burning; the gum which exudes from the stem; and, finally, a sort of toddy obtained from young trees, cause the *nim* to be regarded as one of the most useful trees of India, where the bark is used as a tonic and antiperiodic, both by natives and Europeans. Dr. Paul Andy, of Madras, has found the leaves beneficial in small-pox.

Cortex Swieteniæ, or Rohun Bark, was recommended by Roxburgh as a substitute for cinchona, after numerous trials made in India about 1791. A thesis by Duncan probably led to its introduction into the *Edinburgh Pharm.* in 1803, and the *Dublin Pharm.* of 1807. In India it is regarded as a useful astringent tonic and antiperiodic, being used in intermittent fever, debility and the advanced stages of dysentery and diarrhœa.

Semen Guilandinæ, Bonduc seeds, Indian hazel-nuts, gray nicker seeds or nuts, have been employed on account of their tonic and antiperiodic properties, by numerous European practitioners in India, and have been included in the Pharmacopœia of India since 1868. The powdered kernels *per se*, or mixed with black pepper, are employed in India against intermittent fever.

Radix Abri, or Indian liquorice, has been employed as a substitute for liquorice by the residents of tropical countries of both hemispheres, and the seeds, of the size of a small pea and well known for their beautiful polish and black and red colors, have given their name of *Retti* to a weight ($2\frac{3}{16}$ grains) used by Hindu jewellers and druggists. As a substitute for liquorice, the authors consider it a very bad one.

Fructus Ajavan, derived from *Ammi Copticum*, and sometimes called True Bishop's weed. The plant is an erect annual herb, cultivated in Egypt and Persia, and especially in India, where it is well

known as *Ajvan* or *Omam*. The minute spicy fruits of the plant have been used in India from a remote period. Under the name of ajava seeds, Percival brought it to notice in 1773, having received a small quantity of it from Malabar as a remedy for colic. Ajavan is much used by the natives of India as a condiment. The distilled water, which has been introduced into the *Pharmacopœia* of India, is reported to be carminative, and a good vehicle for nauseous medicines. It has a powerful burning taste and would seem to require dilution. The volatile oil may be used in the place of the oil of thyme, which it closely resembles.

Cortex Alstoniæ is the source from which Gruppe, a pharmaceutist of Manila, has derived an uncrystallizable substance called Ditaïn, to which antiperiodic properties are attributed. The bark is almost inodorous; its taste is purely bitter, and neither aromatic nor acid.

Cortex Mudar is furnished by two nearly allied species of *Calotropis*. It was probably in use in India prior to the Christian era, but was not investigated experimentally by Europeans until Playfair recommended the drug in elephantiasis, and its good effects were afterwards noticed by Vos (1826), Cumin (1827), and Duncan (1829). The last named physician also made a chemical examination of the root-bark, the activity of which he referred to an extractive matter which he termed Mudarine.

Mudar is an alterative tonic and diaphoretic,—in large doses emetic. By the natives of India, who employ it in venereal and skin complaints, almost all parts of the plant are used. According to Moodeen Sheriff, the bark of the root and the dried milky juice are the most efficient; the latter is, however, somewhat irregular and unsafe in its action. The same writer remarks that he has found that the older the plant, the more active is the bark in its effects. He recommends that the corky outer coat, which is tasteless and inert, should be scraped off before the bark is powdered for use: of a bark so powdered, forty to fifty grains suffice as an emetic. The stems of one of the varieties: C. gigantia, afford a very valuable fibre which can be spun into the finest thread for sewing or weaving.

Folia Tylophoræ, or Indian Ipecacuanha, is derived from *tylophera asthmatica*, a twining perennial plant, common in sandy soils throughout the Indian Peninsula and naturalized in Mauritius. It may be distinguished from some of its congeners by its reddish or dull pink flowers, with the scale of the staminal corona abruptly con-

tracted into a long sharp tooth. The employment of this plant in medicine is well known to the Hindus, who call it *antamúl* and use it with considerable success in dysentery. During the last century it attracted the attention of Roxburgh, who made many observations on the administration of the root, while physician to the General Hospital of Madras from 1776 to 1778. It was also used very successfully in the place of ipecacuanha by Anderson, Physician-General to the Madras Army. In more recent times the plant has been prescribed by O'Shaughnessy, who pronounced the root an excellent substitute for ipecacuanha if given in rather larger doses. Kirkpatrick administered the drug in at least a thousand cases, and found it of the greatest value; he prescribed the dried leaf, not only because superior to the root in certainty of action, but also as being attainable without destruction of the plant. The drug has been largely given by many other practitioners in India. The dose of powdered leaves, as an emetic, is twenty-five to thirty grains; as a diaphoretic and expectorant, three to five grains.

Semen Kalandanæ, Semen Pharbatilis, are derived from a twining annual plant, with a large blue corolla much resembling the Major Convolvulus of English gardens. It is found throughout the tropical regions of both hemispheres, and is common in India, growing on the mountains to a height of 5,000 feet. The seeds of this plant were employed in medicine by Arabian physicians under the name of Habbeen-Níl, and they have probably been long in use among the natives of Hindustan. In recent times they have been recommended by European practitioners in India, as a safe and efficient cathartic, resembling jalap in its action. Kalandana resin has been introduced into medical practice under the name of *Pharbitisin.* It has a nauseous, acrid taste, and an unpleasant odor, especially when heated. Besides the resin, an extract, tincture and compound powder have been introduced into the *Pharm. Ind.*, and in many parts of the country the natives take the roasted seeds as a purgative.

Herba Andrographidis, called Kariyát or Creyat, is an ancient Hindu medicine, having the properties of a pure bitter tonic, and being sometimes confounded with chiretta. In Bengal its name, *Maha-tita*, signifies literally "king of bitters."

Semen Ispaghulæ, or Spogel seeds, are found in all the bazaars of India, where they are highly esteemed in decoction, as a cooling demulcent drink. The seeds powdered and mixed with sugar, or made gelatinous with water, are sometimes given in chronic diarrhœa.

Ispingo is the designation, in Quito, of the calyx of a tree of the laurel tribe, used in Ecuador and Peru in the place of cinnamon. Though but little known in Europe it has a remarkable history.

The existence of a spice-yielding region in South America having come to the ears of the Spanish conquerors, was regarded as a matter of such high importance that an expedition for its exploration was fitted out. The direction of the enterprise was confided to Gonzalo Pizzaro, who, with three hundred and forty soldiers, and more than four thousand Indians, laden with supplies, quitted the city of Quito on Christmas day, 1539. The expedition, which lasted two years, resulted in the most lamentable failure, only one hundred and thirty Spaniards surviving the hardships of the journey. In the account of it given by Garcilasso de la Vega, the cinnamon tree is described as having large leaves, like those of a laurel, with fruits resembling acorns growing in clusters. Oviedo has also given some particulars regarding the spice, together with a figure fairly representing its remarkable form; and the subject has been noticed by several other Spanish writers. Notwithstanding the celebrity thus conferred on the spice, and the fact that the latter gives its name to a large tract of country, and is still the object of a considerable traffic, the tree itself is all but unknown to science.

Boldo is the latest novelty in materia medica, from South America. The leaves are used on account of the aromatic oil they contain. The alkaloid discovered has been called boldine by Claude Verne and M. Bourgoin, the joint discoverers. The tree is indigenous to South America, where the plant is a popular remedy against syphilis and diseases of the liver. The leaves are covered on their surface with small glands. The essential oil is contained in cells, which are met with in nearly every part of the plant, the oil vessels being spherical and of large diameter. The volatile is obtained at the rate of about two per cent., and is a mixture of various bodies. The preparations used are an alcoholic extract, aqueous extract, essential oil, tincture, wine made with madeira, syrup, and elixir. The leaves and flower stems are alone employed. The dose of the wine is a tablespoonful to a wineglassful once or twice daily.

A Novelty in Mustard Plaster.—MacKay's omphalic mustard plasters, or leaflets, consist of disks about the size of a sixpence attached to small sheets of a light transparent material. These are four and a half inches by three and a half, and have each twenty spots. They are merely to be dipped in water and applied. By leaving them on for a longer or shorter time, any required amount of effect may

be obtained, from a glow of redness to actual blistering. The spot principle, too, seems quite in accordance with nature's efforts to relieve internal congestion and inflammation, as in the various rashes which from time to time appear on the body. The same principle has been applied to fly-blisters which are made with spots of three sizes, the smaller ones, most recommended, being four-tenths of an inch in diameter, and eighty-five of them on a sheet six inches square. They occasion a crop of vesicles which appear in regular order, having intervals of unblistered skin between. What renders common blisters so painful is the denudation of a large continuous surface of the sensitive skin. The spot plan is said to entirely do away with this, leaving as it does the sound intervals. This also renders it easier to heal up a blister when the necessity for it has passed away.

A New Variety of Senna.—The *Pharmaceutical Journal* states that there is now in London a very large quantity of a drug which is being offered as fine senna. It may be distinguished from the officinal senna by the peculiar arrangement of the veins of the leaf. Instead of having one central vein, with all the others branching from it, as in senna, the leaves of this variety have two or more prominent veins starting from the centre of the base of the leaf, and these are repeatedly forked in an almost parallel manner. The leaves appear to belong to a species of *Cassia*, and may therefore possess purgative properties.

The Action of Light on Iodide of Potassium.—In a communication presented to the *Société de Pharmacie*, by M. Vidan, pharmacian-major, that gentleman gives details of numerous experiments on the action of sunlight on potassium iodide. Attention was accidentally directed to the subject whilst preparing a solution of potassium iodide, by pouring rain water over the salt contained in a funnel. As the solution ran through a flask, the more highly charged liquid formed a heavy layer at the bottom, with a dilute solution floating above it. It chanced that the flask received the powerful rays of the sun through an open window, and in a very short time the strong solution in the lower part of the flask (about one-fourth of the whole contents) was noticed to be colored yellow, the supernatant liquid being quite colorless. By agitation a colorless solution was obtained without action on starch water.

Experiments suggested by this observation led to the conclusion that the action of sunlight on solution of potassium iodide (enclosed in white glass flasks filled with the liquid, and sealed) is more energetic, (1) as the solutions are more concentrated; (2) as they are less alkaline.

Iodine is liberated even in slightly alkaline solutions if the weight of salt equals the weight of solvent. If the solutions be slightly acidified with acetic acid, the separation of iodine readily occurs when ten per cent. only of salt is present; whilst a similar solution, exposed to precisely the same conditions, with the exception that sunlight is excluded by a triple shield of colored paper, gives scarcely any indication of free iodine.

Starch paper was imbued with solution of potassium iodide, enclosed in hermetically-sealed glass flasks previously rinsed with distilled water, and the flask exposed to the sun's rays. At the end of an hour the starch paper in a white flask was colored violet; in a blue flask, and also in a white one enveloped in two colored papers, the one yellow and the other blue, the starch paper was unaffected. The same results were obtained with starch paper dipped in solution of tartaric acid. In an unprotected white flask exposed to diffuse daylight, the effect was less decided.

Phosphorated Oil.—At a meeting of the British Pharmaceutical Society (reported in the *Pharm. Jour. & Trans.*) a paper on the Pharmacy of Amorphous Phosphorus was read by one of the members present, and gave rise to an interesting discussion, which ultimately turned on the new officinal preparations of phosphorus. Professor Redwood gave his experience of these compounds, and had found the phosphorated oil a very satisfactory article. He had kept the solution for many months, and if not exposed to the light it kept perfectly well. It was luminous in the dark, it smelt strongly of phosphorus, and it had the ordinary disagreeable taste. A few drops formed a dose, and the only question was how it should be administered. He recommended it as an emulsion, and a most perfect, elegant, and agreeable emulsion it formed; a tablespoonful of it could be taken without disgust, it would keep for any reasonable length of time, and it perfectly fulfilled all the requirements of a medicine. It was made by taking a drachm of the phosphorated oil, two drachms of yolk of egg, six drachms of syrup of tolu, a drachm of liquor potassæ, and sufficient chloroform water to make up to six ounces. There was, no doubt, a little art in mixing it, because if the yolk of egg and phosphorated oil were mixed together, and the liquor potassæ put in, it formed a magma, to which the chloroform water and syrup could not be afterwards added with advantage; but if the phosphorated oil, the yolk of egg, the syrup of tolu, and the chloroform water were well rubbed together, and then the liquor potassæ added and well shaken up, a good emulsion would be produced, which would keep for several months. It had an agreeable taste, the odor was nothing offensive,

and no decomposition took place. Of course, if ordinary water were used, the yolk of egg would undergo decomposition and become offensive; but the chloroform water had the remarkable property of preventing such decomposition, and he did not think that they yet knew half the extent of its applicability in pharmacy. He had kept an emulsion of this kind for three or four months in a vessel occasionally open, and it was as sweet and good at the end of the time as at the beginning. In fact, he considered chloroform water one of the best vehicles they had for many medicines, and the emulsion thus made with it was an elegant and not disagreeable form for the administration of phosphorus.

A New Reaction of Essence of Mint.—Dr. Roucher has observed that when essence of mint is added to twenty times its weight of acetic acid, and the two agitated, a blue coloration, gradually increasing in intensity, begins to develop in about half an hour. As the color deepens, a very marked dichromism is noticed, the liquid appearing pure blue by transmitted light, and of a beautiful cinnabar red color by reflected light. This appearance is comparable to that of alcoholic solutions of certain aniline compounds.

The coloration thus produced is not permanent. Under the influence of light it changes first to green, afterwards to yellow. The addition of water is followed by the separation of a very pale blue acetic liquid. On filtering, part of the blue coloring matter remains on the paper; this speedily changes to red, and is finally decolorized by the air. Caustic potash causes instant decolorization.

The essence of mint employed was that usually met with in commerce. Dr. Roucher has examined other essences of known and diverse origin with a view to ascertain if they reacted in the same manner and to the same degree. He found that pure methol dissolved in acetic acid without production of color. Essence of turpentine, camphor, and essence of citron do not give rise to this appearance.—*Chemist and Druggist.*

Note on Veratrine.—The light and pulverulent veratrine of the chemical manufacturers, after an examination of many samples obtained from different sources, seems to be in most cases simply the product precipitated by an alkali from the sulphuric solution of the alkaloid decolorized by charcoal, a product which has not been crystallized from pure ether as prescribed by the *Codex*. This commercial veratrine, when heated with ether of 65° Baume, always leaves a brownish residue (veratrine of Couerbe), soluble in alcohol, and forming sometimes 20 per cent. of the whole, while veratrine prepared

conformably to the directions of the *Codex* is a colorless resinoid substance, entirely soluble in ether. The pharmaceutist who does not prepare his own veratine should never omit to assure himself that what is supplied to him for such is completely dissolved by ether of 65°. In those cases where a brown residue is left, to purify it he would only have to treat the whole with six or eight times its weight of this vehicle, and after allowing the insoluble matter to subside, to decant the clear solution into a capsule from which the ether might speedily evaporate. The two special characters of veratrine are as follows: 1. A particle placed in contact with 10 g. sulphuric acid communicates to it a yellow tint, which soon passes to a persistent blood-red. This tint is dichromic. 2. Some centigrammes of this alkaloid added to 10 cc. of hydrochloric acid develop in it *on boiling* a very fine purple-red coloration.

Some authors say that veratrine develops a scarlet color in contact with nitric acid. I have never observed more than a fugacious faint yellow coloration.—*M. Lepage in Jour. de Phar. et de Chimie.*

Camphorated Phenol.—Bufalini, in *Campania Med.* (*London Medical Record*) describes the combination of camphor and phenol. If equal parts of carbolic acid and camphor be dissolved in alcohol, and the mixture be allowed to stand for twelve hours, an oily stratum arises to the surface. This will not mix with the water or liquid, nor is the camphor precipitated by the alcohol. This substance is called camphorated phenol. It is best prepared as follows: One part of carbolic acid and two of camphor are mixed in a vessel and allowed to stand for some hours. An oily liquid will be formed, which is to be purified by washing with water. The properties of this combination are an oily appearance, smell of camphor, insolubility in water, but solubility in alcohol and ether. From considerable experience in its use, Bufalini concludes: 1. Camphorated phenol produces the same effects as carbolic acid, but is less dangerous. It may be used both externally and internally, viz.: in enteric fever, etc. 2. It has the power of modifying unhealthy wounds and of destroying the parisites which are present in certain diseases, as septicæmia, fever, etc. 3. The medical use of camphorated phenol is to be preferred to that of carbolic acid, as the latter does not present the advantages of the former. 4. Camphorated phenol, when applied to wounds, does not irritate them or act as a caustic or disorganizing substance on them, and may be used in large doses, without producing symptoms of poisoning.—*Laboratory.*

Preparation of Cantharidine Tissue.—Ernst Rosenberg, in Orenburg, prepares cantharidine taffeta in this wise: First, a solution

is prepared of 5.5 grammes turpentine, 2 grammes sandarac, and 8 to 10 drops olive oil, in 180 grammes of cantharidine ether. The solution is then applied to silk taffeta, extended on a frame (the taffeta must have been previously treated with isinglass solution and dried), four times in succession, quickly and uniformly: a flat brush is the best to use. The cloth must be allowed to dry completely after each application before the next is made. After the last coat the taffeta is once more treated with a *spirituous* solution of isinglass. The isinglass solution is obtained by steeping 15 grammes of the best finely-cut isinglass in 150 grammes spirits of wine, of 32 per cent., subsequently boiling two or three times, straining, and lastly adding 40 drops of glycerine. To prepare cantharidine ether, 90 grammes of coarsely-powdered cantharides are put into a retort with 600 grammes spirits of wine of 92 per cent., 205 drops of dilute sulphuric acid are added, and the whole boiled. After cooling, express and again boil the residue in the retort with 570 grammes of spirit and 195 drops of dilute acid, and again express. The spirit is recovered from the mixed liquids by distillation, and the residue mixed with water. After standing one hour the fat which separates is removed and washed, and the wash-water agitated with the remaining fluid and 180 grammes of ether. After the ether has separated from the acid liquid, it is removed and preserved in well-closed bottles. In application, the taffeta is simply moistened with a little water, and made to stick by gentle pressure and smoothing with the finger. By moistening with warm water, the taffeta may be removed at pleasure without smarting; in other respects it more than satisfies the claims usually made on an article of this nature. The active principle being closed between two gelatinous layers, its efficacy is not impaired even after very long keeping. The action is exceedingly rapid, and causes no smarting.—*Chemist and Druggist.*

Vaseline.—This new product of petroleum to which this name has been given promises to come into use as a vehicle for various emollient preparations, for which it appears to possess some peculiar advantages. It is a solid semi-transparent jelly, and free from taste or odor, and it is said to undergo no change by keeping. It becomes liquid at a temperature of 93° Fahr. The manufacturers state that it is prepared simply by the evaporation of crude petroleum and filtering the residue through animal charcoal.

Falsification of Lard.—If a small quantity of milk of lime be added to melted lard, the soap which is formed permits of the incorporation of about 25 per cent. of water with the fatty body in such a

way that at first sight the falsification is not noticed. This property of calcareous soap is known to and put to use by the American lard renderers, as was discovered by a druggist who employed some such lard in the preparation of a pomade containing nitrate of mercury; he was astonished to find his pomade assume a slate color. On examination the lard was found to contain much water and some lime.—*The Chemist and Druggist.*

The Boiling Point of Glycerine.—Regarding the behavior of glycerine when heated, the statements of the most reliable recent manuals vary very considerably. To cite only a few of these according to Kekulé's *Lehrbuch* (1866, vol. ii., p. 125), pure glycerine distils almost completely at a brisk heat of 275° to 280° (see Berthelot's *Chimie Organique*, Wurtz's *Chimie Médicale* and his *Dictionnaire*). In Stricker's *Lehrbuch*, it is stated that glycerine boils at 280°, but the greater part remains behind. In Watt's *Dictionary of Chemistry* it is said that when glycerine is heated alone, only a small portion volatilizes unchanged, and no boiling point is given. With the view of ascertaining the correct boiling point of glycerine, Messrs. Oppenheim and Salzmann instituted a series of careful experiments, which enabled them to fix it at 290·08°, after the necessary corrections were made.—*Ibid.*

Magnesium Metatartrate.—This salt has just been introduced to medical practice in Germany. It is a white powder, which easily dissolves in water, and thus differs essentially from the tartrate. In the solid form, magnesium metatartrate retains its solubility for an unlimited period, and even diluted solutions remain clear for a considerable time, whereas the concentrated solution soon deposits a white precipitate of the well-known magnesium tartrate. At a high temperature, such as is attained by boiling, this change is very much accelerated, and a solution of pure magnesium tartrate finally results. This preparation is particularly recommended as a substitute for magnesium citrate, which it resembles in medicinal effect and in its agreeable taste, and may be produced more economically.—*Ibid.*

Sulphate of Amorphous Quinine.—In the *Chemical News*, it is stated that Dr. de Vrij's (patented) process for purifying the quinoïdine of commerce consists in treating the dark-brown solution of hyposulphite of sodium and other salts, whereby the liquid is deprived of a dark resinous matter, and the quinoïdine thus purified forms with acids very soluble compounds, which do not melt at a temperature of 212° F., and form a powder which is only very slightly colored.—*Chemist and Druggist.*

Kaolin for Clarifying Wine.—The experiments of B. Hoff with Austrian and Hungarian wines show that kaolin can be employed for clarifying wines. A quantity of kaolin equal to ½ of one per cent. of the weight of the wine to be clarified is triturated with a little wine to a thin paste, and then added to the wine to be clarified, and well mixed. If ½ of one per cent. does not produce the desired effect, as much more is added. If the wine clears slowly it is well to stir up the kaolin in the barrel. The kaolin employed must not contain a trace of iron, otherwise it colors the wine a little. The iron is easily removed by treating with dilute hydrochloric acid, which must afterward be entirely washed out with water. The action of the kaolin is principally this, that it unites with certain protein substances that are suspended in the water and forms with the insoluble compounds that settle quickly. The kaolin occupies but little space after it has settled, and the clear wine can be drawn off to the last drop. If kaolin be added to wine while fermenting it, it immediately becomes clear. Kaolin also renders filtration entirely superfluous, for in settling it carries all the impurities along with it.—*Jour. of App. Chem.*

Chemical Incompatibility of Corrosive Sublimate and Muriate of Morphia.—A solution for hypodermic use was recently prescribed containing eight grains of mercuric chloride, and four grains of muriate of morphia in an ounce of distilled water. The mixture resulted in the formation of a sparingly soluble double chloride of mercury and morphia, which crystallized out of the solution. The addition of over forty per cent. of glycerine to the menstruum failed to hold the salt in solution, and the prescriber, therefore, gave up the attempt to combine these agents in a concentrated solution. It is possible that the substitution of some other salt of morphia would entirely obviate the difficulty. The double oleate of mercury and morphia applied by inunction might perhaps be a less objectionable mode of exhibiting the remedies.

Composition of Eucalyptus Oil.—In continuation and conclusion of their investigations on eucalyptol, the authors, A. Faust and J. Homeyer, announce the result of their labors on the composition of eucalyptol, as follows:

1. A peculiar terpine, boiling at 150° to 151°.
2. Another terpine, boiling at 172° to 175°.
3. Cymol.
4. An oxygenated body, closely resembling cymol.

The terpine under 2 and the cymol constitute 9·10 of the eucalyptus oil. The proportion of terpine to cymol is as 2 to 1. The oxygenated

hydrocarbon boils at 216° to 218°, and its formula is $C_{10}H_{14}O$, or $C_{10}H_{16}O$.

Manufacture of Chloral Hydrate.—The manufacture of chloral hydrate is now conducted on an enormous scale, some German makers supplying over 500 pounds daily. Chlorine is passed into alcohol of at least ninety-six per cent. For 120 to 150 pounds of alcohol the current of chlorine must be maintained for twelve to fourteen days, in which time the temperature rises to 60° to 75°, and the liquid acquires the density of 41° Baume. The crude product thus obtained is purified by heating it with an equal weight of strong sulphuric acid, in copper vessels lined with lead. Considerable quantities of hydrochloric acid escape at first, and afterward chloral distills at 95° to 100°. This distillate is redistilled, collected in glass flasks, and mixed with water; and the hydrate then formed, is either poured into large porcelain basins, in which it solidifies in cakes, or is poured into vessels one-third full of chloroform, to crystallize.

Adulterations.—On page 67 of NEW REMEDIES of January last we mentioned a number of adulterations of drugs, commercial products, chemical and pharmaceutical preparations as having been reported at the last meeting of the British Pharmaceutical Association. It should have been the American Pharmaceutical Association instead, Mr. Charles Rice, of the College of Pharmacy of this city, having been the reporter.

Syrups containing Phosphoric Acid.—The *Canadian Pharmaceutical Journal* has a paper read by Silas Daniel, at the Br. Pharmaceutical Conference, in which the following formulæ are strongly recommended as giving uniform and quite stable products:—

Syr. Ferri Phosph. Co.

Sulphate of iron	671 grains.
Phosphate of soda	2503 "
Acetate of soda	222 "
Chloride of calcium	585 "
Carbonate of soda	40 "
Carbonate of potash	60 "
Cochineal	120 "
Phosphoric acid, syrupy, sp. gr. 1.5	30 fl. drachms.
Sugar	24 ounces.
Orange-flower water	1 ounce.

Dissolve the sulphate of iron in three ounces, and the acetate and 600 grains of the phosphate of soda in eight ounces of warm distilled

water. When quite cold, mix the two solutions, and after careful stirring, wash the precipitate, by means of decantation with distilled water, and collect on a filter. Dissolve the chloride of calcium in one ounce, and the remainder of the phosphate in seventeen ounces of warm distilled water. When cold mix the solutions, wash by decantation, and collect on a calico filter. After draining, submit the precipitate to strong pressure. Dissolve the two precipitates in the acid. To the solution add the carbonates, which should first be rubbed down in a mortar with a few drops of distilled water.

The cochineal having been reduced to a very fine powder, is mixed with the sugar and thirteen ounces of distilled water, and the whole raised to the boiling point. Strain through flannel, and when quite cold add the orange-flower water, the solution of the phosphates, and enough distilled water, if necessary, to make thirty-six fluid ounces.

By boiling the sugar and cochineal, a bright syrup of rich color is produced. It contains 1 gr. phosphate of iron, 2½ grains phosphate of lime, and fractions of grains of phosphates of soda and potash, and acid equal to about 35 minims of acid phos. dil. B. P. in each fluid drachm. Sp. gr. 1.308.

Liq. Ferri Phosphatis.

Sulphate of iron	224 grains.
Phosphate of soda	200 "
Acetate of soda	74 "
Phosphoric acid, sp. gr. 1.5	7 fl. drachms.
Distilled water	q. s.

Dissolve the sulphate of iron in 1 ounce, and the phosphate and acetate of soda in 2½ ounces of warm distilled water. When quite cold, mix and well stir the two solutions, allow it to remain for a few minutes, and then wash the precipitate by means of decantation with distilled water. Collect the precipitate in a filter, and allow it to drain. Lastly, add it to the phosphoric acid, and make up with distilled water to two fluid ounces. One fluid drachm is equivalent to six fluid drachms of syrup, and the proportions of phosphoric acid and phosphatis correspond to those given by Mr. Carteighe.

Liq. Ferri et Mang. Phosph.

Ferri sulph	168 grains.
Manganesii sulph	113 "
Sodæ phos	247 "
Sodæ acet	93 "
Aquæ destillatæ	q. s.
Acid. phos. glacial	℥ vi.

Dissolve 150 grains phosphate and 56 grains acetate of soda in 2 oz., and the sulphate iron in 6 drachms of warm distilled water, and allow to cool. Wash and collect the precipitate as directed in the last. Dissolve the sulphate of manganese in six drachms, and the remainder of the phosphate and acetate of soda in ten drachms of warm distilled water. Mix the two solutions. Wash and collect the precipitate as the preceding ones. Add the glacial acid to the two moist precipitates, and when dissolved filter and add distilled water to two fluid ounces; one fluid drachm is equivalent to six fluid drachms of syrup. The syrup when made will contain $\frac{1}{4}$ grain phosphate of iron and $\frac{1}{2}$ grain phosphate of manganese in each fluid drachm.

Glacial acid has been used in this preparation, as directed in the *Pharmaceutical Journal*, vol. i., 3d series, p. 288. It has kept admirably.

Liq. Ferri et Calcis Phosph.

Sulphate of iron	224 grains.
Phosphate of soda	200 "
Acetate of soda	74 "
Phosphate of soda	508 "
Chloride of calcium	156 "
Phosphoric acid, sp. gr. 1.5	8 fl. drachms.

The ferrous phosphate having been prepared as before directed, dissolve the remaining phosphate of soda in five ounces, and the chloride of calcium in three drachms, of warm distilled water. When cold, mix the two solutions, stir and wash. Collect the precipitate on a calico filter, after draining, press it firmly until the weight of the moist phosphate is reduced to six drachms. Dissolve the two precipitates in the acid, and add distilled water, if necessary, to make two fluid ounces. One fluid drachm is equivalent to six fluid drachms of syrup, which when made will contain one grain of phosphate of iron and two grains phosphate of lime in each fluid drachm.

Liq. Ferri et Strychniæ Phosph.

Sulphate of iron	448 grains.
Phosphate of soda	400 "
Acetate of soda	148 "
Phosphoric acid, sp. gr. 1.5	10 fl. drachms.
Strychnia, in crystal	3 grains.
Distilled water	q. s.

Dissolve the sulphate of iron in two ounces, and the acetate and phosphate in five ounces warm distilled water. Wash and collect on

a calico filter. After draining, press out some of the remaining water. Dissolve the precipitate and the strychnia in the acid, and add distilled water, if necessary, two fluid ounces. One fluid drachm diluted to six drachms with simple syrup will contain in each fluid drachm two grains phosphate of iron and $\frac{1}{32}$ of a grain of strychnia.

Liq. Ferri et Quiniæ Phosph.

Sulphate of iron	448 grains.
Phosphate of soda	400 "
Acetate of soda	148 "
Phosphate of quinine	96 "
Distilled water	q. s.
Phosphoric acid, sp. gr. 1.5	9 fl. drachms.

Prepare the ferrous phosphate in the same manner as directed for liq. ferri et strychnia phosph., and dissolve it in the acid, and make up with water to two fl. ounces. The phosphate of quinine is best added when required.

Syr. Ferri et Quiniæ et Strychniæ Phosph.

As has been pointed out, this preparation neither in solution nor in syrup will keep without becoming discolored. It may be made by adding six gr. phosphate of quinine to each fl. drachm of the liquor, or one gr. to each fl. drachm of the syr. ferri et strychniæ phosph.

Liq. Zinci Phosph.

Most chemists keep phosphate of zinc, and, as its solubility is not impaired by keeping, it is best made direct in the manner directed by Mr. Carteighe.

Liq. Manganesii Phosph.

Sulphate of manganese	226 grains.
Phosphate of soda	194 "
Acetate of soda	74 "
Phosphoric acid (1.5)	7 fl. drachms.
Distilled water	q. s.

Dissolve the sulphate of manganese in one ounce, and the phosphate and acetate of soda in two-and-a-half ounces of warm distilled water. Mix the two solutions; wash by decantation. Collect on a fine calico filter, and, after draining, pour out a portion of the remaining water. Dissolve the precipitate in the acid, and add distilled water, if necessary, to two fluid ounces.

One part made up to six with simple syrup will contain, in each fluid drachm, one grain of phosphate of manganese.

TOXICOLOGY.

INOCULATION WITH BEE POISON.

Mr. George Walker, of Wimbledon, in a letter to the editor of the *British Bee Journal*, opens up the interesting question as to whether immunity from the pain and other injurious effects of the sting of the bee can be obtained by inoculation. The subject, it appears, is referred to in "Wood's Book on Bees," and Mr. Walker, noticing the manner in which the owner of the Hanwell apiary managed his bees (the stings apparently having no effect upon him), asked him how long a period it required to make a man sting-proof, and was answered that his son had only been a short time working with bees and was quite free from any of the usual effects of bee-stings. Mr. Walker determined to put the matter to the test of experiment. The *modus operandi* was as follows: He went to one of his hives, caught a bee, placed it on his wrist, and allowed it to sting him, taking care that he received the largest amount of poison by preventing it from going away at once. The first few stings he got during this experiment had the usual effect, the whole of his forearm was affected with a cutaneous erysipelas, and there was disorder of the nerves, accompanied with heat, redness, swelling, and pain. This attack lasted till Tuesday, and and on Wednesday, Oct. 7th, he was so far recovered that, following the same plan, he stung himself three times more, also on the wrist. The attack of erysipelas this time was not near so severe, but, as before, he felt a stining sensation as far up as his shoulder, and he noticed that a lymphatic gland behind his ear had increased considerably in size, the poison being taking up by the lymphatic system. On Saturday Oct. 10th, he again treated himself to three stings, and the pain was considerably less, though the swelling was still extensive. At the end of the next week (Oct. 17th) he had had eighteen stings; then he stung himself seven times more during the next week, and reached the number of thirty-two on Oct. 31st, the course of the experiment having lasted very nearly four weeks. After the twentieth sting there was very little swelling or pain, only a slight itching sensation, with a small amount of inflammation in the immediate neighborhood of the part stung, which did not spread further.—*Lancet*, Dec. 19, 1874.

The Poisonous Action of Arnica upon the Skin.—In a long list of substances enumerated as capable of producing eczema, in his chapter on this disease, Hebra includes arnica without special mention; in his article on erythema nodosum he says: "Some medical men, however, suppose that the tincture of arnica is a perfectly harmless remedy in erythema nodosum, and in similar affections. But I would give a friendly warning to those who advocate its use; unless, indeed, they propose to employ it homœopathically and in infinitesimal doses. In the proportion of a drop of the tincture to a pail of water, this substance may be applied wihout any risk of doing harm. But I have in practice had abundant occasion to observe the tincture of arnica, even when much diluted, acts most injuriously upon the skin of some persons. I have frequently seen eczema or dermatitis excited by the assiduous application of lotion containing this drug, in the treatment of slight bruises and sprains." Fox, in his brief remarks on Medicinal Rashes, says: "Arnica may produce erythema and swelling of the part to which it is applied, or it may excite a real eczema."

It is to warn physicians who may be ignorant of these properties belonging to it, and through them the public may be more generally informed concerning the dangerous character of one of the most popular and useless among the domestic external remedies, that I have thus brought the subject before the profession.—WHITE—*Boston Med. and Surg. Journal*, Jan. 21, '75

Poisoning by Carbolic Acid.—Mr. F. Warren, Resident Surgeon at Stevens' Hospital, Dublin, relates the case of a man who drank some solution of carbolic acid intended for disinfecting purposes, mistaking it for whiskey. Its action was most rapid; he immediately became insensible, falling down suddenly as if in a fit; on his recovery he said that he remembered nothing whatever after tasting the liquid. When brought to the hospital he was suffering from extreme syncope. The stomach pump was used, stimulant enemata administered, and after about seven hours he recovered his consciousness and gradually rallied from the depression. An attack of acute gastritis followed. The urine passed the day after the accident was almost black, but was free from turbidity, and no trace of carbolic acid, blood or albumen could be detected in it.

Poisoning by Cypripedium.—In a short paper in the *Pharmacist*, Mr. H. H. Babcock states certain experiences which lead to the supposition that various species of *Cypripedium* possess a similar toxic action to that attributed to *Rhus Toxicodendron*. For four or five seasons, Mr. Babcock had carefully avoided the latter plant; but de-

spite all precautions, he at last realized the symptoms of severe Rhus poisoning. In June, 1872, after gathering many specimens of *Cypripedium spectabile*, he observed that his hands were stained with the purplish secretion peculiar to the plant, and shortly afterwards he experienced an irritation of the eyes which, by the next day, had developed into unmistakable symptoms of poisoning. A review of the notes of previous years revealed the fact that other poisonings—hitherto attributed to Rhus—had always followed the days on which *C. spectabile* or *C. pubescens* had been collected. During the seasons of 1873 and 1874 he was particularly careful to avoid touching these plants, and thus escaped a result which had been before considered almost inevitable. Mr. Babcock is convinced that, at least upon himself, the action of Cypripedium and Rhus is precisely similar, and thinks that it is possible that, in other cases, the toxic action of the former plant is wrongly attributed to the latter.

Nicotine as an Antidote to Strychnia.—Professor Haughton, of Dublin, relates a case of strychnia poisoning which was treated by drop doses of nicotine in whiskey punch every half-hour. At the second dose the paroxysms became less violent, and the muscles of the abdomen softer. Four doses produced relaxation of the muscles. This confirms previous experience on this subject. Dr. Fraser, Professor of Materia Medica at Aberdeen, says that nicotine combines a feebly paralyzing effect on the motor nerves, with a more decided paralyzing action on voluntary muscular fiber. The action of nicotine very much resembles that of physostigma (or calabar bean), acting, however, more directly upon the muscles, and producing complete relaxation of them. Physostigma acts by diminishing, and in large doses destroying the reflex activity of the spinal cord.—*British Medical Journal.*

Fatal Poisoning from Chlorate of Potassa.—Dr. A. M. Ferris gives a case of supposed poisoning from chlorate of potassa, where a "large spoonful" of the salt was swallowed by mistake, and was followed by congestion of the surface, blue lips, cold extremities, inability to empty the bladder, hæmaturia and death. At the post-mortem examination the auricles were found filled with coagula, and the ventricles empty and contracted. The lungs and abdominal viscera were healthy. As the brain and kidneys were not examined, absolute truth appears to be wanting that the symptoms were really due to the salt of potash.—*Pacific Medical and Surgical Journal.*

Detection of Picric Acid in Beer.—Brunner recommends the following modification of Pohl's method: Acidulate the beer with

hydrochloric acid, immerse a piece of woollen yarn, and digest on a water bath. Remove the wool, warm with solution of ammonia, filter, evaporate to a small bulk on the water bath, and add a few drops of a solution of cyanide of potassium. One milligramme of picric acid in a pint of beer will cause a red coloration, due to isopurpurate of potassum.—*Chemist and Druggist.*

POISONING BY CHLORAL HYDRATE.

The following case (reported by Mr. Hulke) and the remarks following it, were presented at a recent meeting of the London Clinical Society:—

A young lady, aged twenty-three, was supposed to have taken four ounces of syrup of hydrate of chloral; at all events, she was known to have had a bottle containing this amount in her possession a few hours previously, and the bottle was subsequently found to be empty. Within a very short period of taking the dose, when seen by Mr. Hulke, she was found to be perfectly insensible, breathing slowly and laboriously, almost stertorously; her face was dusky; her radial pulse small and very weak, and her pupils were extremely contracted. During the next five minutes (which period was occupied in procuring a stomach-pump) her face became very purple, and her breathing so feeble that it was feared to introduce the tube into the stomach, lest some possible pressure on the root of the tongue and epiglottis might extinguish life altogether. A few acts of Silvester's method of artificial respiration lessened her lividity; the stomach-pump was then introduced, and some warm water pumped in, which, upon being withdrawn, was thought to smell of chloral. During this proceeding the patient again became livid; the use of the tube had consequently to be discontinued, and Silvester's method resorted to, when her color speedily improved. The tube was then re-introduced, and a cup of very strong coffee injected into her stomach. A similar amount was also thrown up the rectum. The case now seemed hopeless; the radial pulse could scarcely be felt, and natural respiration could only be maintained by supplementing it at short intervals by the Silvester method. A few minutes after the injection of the coffee a slight improvement was observed in the pulse and respiration, which was maintained. About forty minutes after being first seen she slightly opened her eyes and spoke. Her first words were imperfectly articulated and unintelligible. In another half hour she was so far improved that her breathing was perfectly natural, and she was quite

conscious. She suffered no further relapse, and recovered entirely from the effects of the poison. She had since become insane.

Mr. Pugin Thornton related the particulars of a case of delirium tremens, where eight drachms of chloral hydrate were administered within thirty-three hours and a half. The delirium was not relieved thereby; on the contrary, the patient recovered as soon as the chloral was stopped.

Dr. Farquharson said that records of cases of chloral poisoning were interesting now that "chloral eating" was so common. The symptoms of an overdose of chloral varied in different cases. Sometimes the heart was immediately acted on, fainting being a symptom; at other times the effect was more upon the pneumogastric nerve. It was a question whether these differences were to be referred to idiosyncrasy or to the quality of the drug—that is, to impurities. Chloral was often impure, and Liebreich had said that the administration of it in this condition is the cause of the preliminary intoxication sometimes observed after its exhibition. Liebreich had also observed that chloral acts badly in gout, because the alkalinity of blood necessary for its decomposition is not present in that disease. Dr. Farquharson himself had found that in acute rheumatism large doses of chloral had not only not done good, but had even caused delirium. As for the dose of chloral which might be given, he had used as much as six drachms a day in neuralgia.

Dr. Rhys Williams said that in Bethlehem Hospital the results of the use of chloral had been rather unfavorable. As regards large doses, he had given in one case of chronic insanity as much as two drachms every four hours, and that without either relieving the symptoms or inducing sleep.

Dr. Headlam Greenhow remarked, in reference to the therapeutics of chloral, that in delirium tremens he had used it eight or nine times, and with the result that he was better satisfied with it than with any other drug he had tried. He administered ten grains every few hours until sleep supervened. In rheumatism the theoretical objection to chloral was plausible; but as a matter of fact he had found chloral useful in the disease. Chloral hydrate was, however, very much like other drugs, uncertain; and his rule was to give it a fair trial, and, if the result were unsatisfactory, to try something else.

Mr. Thornton inquired of Mr. Hulke whether there was any known antidote to hydrate of chloral. Was strychnia, for example?

Dr. Southey said that in the case just read it was not impossible that some other poison had been taken besides chloral. The symptoms were not unlike those of opium poisoning. He had seen chloral given, without toxic effects, in thirty-grain doses every four hours.

Mr. Brudenell Carter wished to know whether there really is sufficient evidence of diminished alkalinity of rheumatic blood. A gouty patient had told him that the discovery of chloral was to him a source of untold bliss and happiness.

Mr. Hulke replied, that, in regard to an antidote, the effect of the administration of coffee was most encouraging. As to Dr. Southey's remarks about the possibility of opium having been also taken, he had himself such a suspicion when he saw the case; the face was, however, more flushed and excited than is generally seen in opium poisoning. Dr. Greenhow and others had spoken of the uncertainty of chloral as a sedative; he could confirm this, but believed that it was due more to the peculiarity of the patient than to impurity of the drug. He had prescribed chloral from the same specimen to many cases of can cer simultaneously, and found the effects exceedingly different, but perhaps not more so than those of opium.

Death after Intra-Venous Injection of Chloral.—The success which has attended a small series of cases of intra-venous injection of chloral seems to have rendered some practitioners over-bold. Dr. Lande relates a case of ovariotomy in which sleep was induced in the space of about fifteen minutes after the injection of an aqueous solution of 15 grammes (225 grains) of chloral. The insensibility produced was absolute, and the operation, owing to adhesions which had to be ruptured with the hand, lasted about half an hour. The patient soon began to sink, and died in little more than an hour after the operation was commenced. The hemorrhage was too moderate to account for the death, and it is most probable that death resulted from the influence of the anæsthetic directly introduced into the circulation —*Times and Gaz.*, Jan. 6, '75.

On the Physiological Test for Poisons.—M. M. Albertoni and Lussana (*Annales d'Hygiène*, July, 1874) find that the extractive matters obtained from the various animal fluids and issues produce death in animals when injected subcutaneously or into the veins. The symptoms produced by such injections are first an increase and then a diminution in the frequency of the pulse, soon a lowering of the temperature, slow respiration, diarrhœa, and certain convulsive and paralytic phenomena, most frequently paraplegia. Ordinary extract of meat, like Liebig's extract, has precisely the same effect; also the substances extracted in the ordinary way from the organs of two sisters who died under suspicious circumstances proved fatal to animals when injected subcutaneously, the symptoms which were produced being the same as those caused by the extract of meat. They conclude,

therefore, that it is impossible to affirm that certain organs contain a substance foreign to the organism and capable of producing death, because the extract from those organs has been found to cause the death of an animal when injected subcutaneously.—*Boston Med. and Surg. Journ.*, Jan. 14, 1875.

Yerba Del Perro.—Still another candidate for medicinal honors has arisen in Paris to follow Guarana, Jaborandi, Boldo, and the rest. M. Rabuteau lately presented to the *Societe de Biologie* a specimen of a Mexican plant known as Yerba del Perro—dog grass—and an account of some experiments he had made with it on animals. It appears to be highly poisonous, producing effects somewhat analogous to strychnine. Its administration occasions wide dilatation of the pupils, and, like Jaborandi, it excites an enormous flow of salivia.

The extract is very deliquescent. Eighty centigrammes (twelve grains) injected into the veins of a medium-sized dog produced the following effects. There was nothing remarkable until an hour had passed; at the end of that time, the dog barked a great deal, foamed very much at the mouth, and fell down in convulsions. These symptoms lasted during half an hour, when the animal died. The brain was congested, but not the spinal marrow; the lungs were in a normal state. This *Yerba del Perro* (dog-grass) belongs to the family of Compositæ; it has a woolly stem, and seems to be highly poisonous.

Poison in the Bamboo.—It has recently been discovered that the bamboo contains a dangerous poison, which the natives of Java extract from the cane in the following manner: The cane is cut at each joint, and in the cavity is found a certain quantity of small, fibrous matter, of a black color, which is covered with an almost imperceptible coating of tissue, which contains the poison. If swallowed, the filaments do not pass into the stomach, but remain in the throat, and produce violent inflammation, and ultimately death. Experiments are to be made with various kinds of bamboo to test the existence and nature of this alleged poison.—*Nature.*

Nelaton's Method in Chloroform-Narcosis.—Dr. M. H. Jordan reports in the case of a girl, æt. 18, to whom chloroform was administered preparatory to the extraction of a tooth. After four or five inhalations, some spasmodic movements were observed, the pulse became excessively small and feeble, and, together with the respiration, soon ceased to be perceptible. The entire muscular system was completely relaxed, and the lips, face, and hands grew livid. The patient's body was immediately inverted, the jaws were pried open, and efforts

at artificial respiration were made by alternately pressing in the thorax and abdomen. After about five minutes had elapsed, there was a feeble attempt at respiration, followed after a long interval by others, and a gradual return of the pulse, until it was deemed safe to place her on a bed. As soon as she was put in the horizontal position, however, the breathing again ceased and the pulse disappeared. She was again instantly placed with her head downwards, and artificial respiration was renewed. After a prolonged interval, the breathing was reestablished, and the pulse again returned. There was no further trouble, except an inclination to stupor, which was counteracted by stimulating applications to the spine, and hot foot-baths.—*The American Practitioner.*

Test for Narceine.—Prof. A. Vogel pours chlorine water on the narceine in a watch glass, and adds a few drops of ammonia. A deep blood, red color is produced, which does not disappear in an excess of ammonia nor by heating.

Testing Sulphur for Arsenic. The test often given to ascertain whether flowers of sulphur contain arsenic, is to digest with aqua ammonia and filter, and to the filtrate add hydrochloric acid. If this causes turbidity, arsenic is present. This test is founded on the supposition that the arsenic is present as sulphide, or, if present as arsenious acid, it will be converted into sulphide by digestion with ammonia. This is seldom the case. The arsenious acid, not being converted into sulphide of arsenic, it remains dissolved in the hydrochloric acid. It is only by adding sulphuretted hydrogen to the acid solution, and observing whether a yellow precipitate is formed, that the absence of arsenic is proven.

Death from the Self-administration of Chloroform.—On the morning of the 8th instant, a young gentleman who resided at Woolton was found dead in bed under the following circumstances: The deceased had suffered from "asthma and toothache," and it appears that he had been in the habit of inhaling chloroform for the purpose of inducing sleep. On the morning mentioned he did not make his appearance as expected, and, on the room being entered through the window, he was found dead in bed. The body was on the left side; the bedclothes were "up about" the face, though not covering it, and a pocket-handkerchief was over the mouth. Dr. Little, who was summoned, found the body in the posture just described, the limbs rigid, and the lower side "rather congested." A handkerchief was on the

bed, and under the bolster was a small bottle containing about a teaspoonful of chloroform. The deceased had, in Dr. Little's opinion, been dead for several hours before he saw him, and had died from an over-inhalation of chloroform. The verdict of the jury was to the same effect.—*Med. Times and Gaz.*, Jan. 16, 1875.

Analogy between Phosphorus Arsenic and Antimony.—Dr. Ch. Roucher refers (*Annales d'Hygiène*, Oct., 1874) to a case of mild arsenic poisoning reported by Dr. Gaillard which has several points of interest. Fowler's solution was prescribed for a patient, twenty-two years of age, for an obstinate eczema. Fifteen drops were ordered morning and night for fifteen days, fifteen drops three times a day for the next fifteen days, and after that twenty drops three times a day. This corresponds to about one-quarter of a grain of white arsenic for the first fifteen days, one-third of a grain for the second fifteen days, and one-half a grain daily after the first month. The result was that the first doses were tolerably well borne, there being only slight disturbance in the stomach. The forty-five drops daily caused vomiting and more intense pain in the stomach. The sixty drops daily could not be borne, and, as the skin disease was not cured, the patient gave up the treatment. A short time afterwards, however, the eczema disappeared. The arsenic caused some pain in the limbs with symptoms of paralysis. After omitting the Fowler's solution, the paraplegia increased instead of diminished. This being attributed by Dr. Gaillard (who first saw the patient five weeks after the omission of the Fowler's solution) to the continued presence of arsenic in the system, an examination of the urine was made and arsenic detected. Its elimination by the kidneys continued for six and one half weeks after discontinuing the medicine. Seven and one half weeks after its omission, no arsenic could be detected in the urine. After this period the paralysis rapidly disappeared.

This case is remarkable, first, for the tolerance of such large doses by one unaccustomed to its use; and, secondly, for the slowness of the elimination of the poison. Different authors give the time for the elimination of arsenic as from twelve days to a month, and many consider that the opinion can be given that, if arsenic is detected in the organs, it must have been ingested within a month before death. The above case, however, shows that it may require about fifty days for its complete elimination. Whether the elimination after chronic poisoning is slower than after acute remains to be decided.

In connection with this case the author cites experiments with tartar emetic, and shows that the action upon the digestive organs, upon nutrition, and upon the nervous system is the same for both arsenic

and antimony. In several cases of phosphorus poisoning reported by Andante, M. Roucher finds similar symptoms produced as in chronic arsenic and antimony poisoning, and he is led to believe that the analogy which marks the chemical properties of these three closely allied elements will be found to exist in regard to their physiological action also.—*Boston Med. and Surg. Jour.*, Jan. 14, 1875.

Arsenic and Antimony.—Drs. Mayencon and Beryent publish in *La France Médicale* the following conclusions as a result of numerous experiments on the action of these remedies upon the organism:—

1. Arsenic is absorbed and diffused in the organism with very great promptness. Elimination through the urine takes place immediately.

2. Antimony is absorbed and diffused more slowly. Urinary elimition rarely begins on the first day.

3. Arsenic is eliminated simultaneously by the liver and kidneys, but more by the liver than by the kidneys!

4. Antimony is carried off in much larger quantities by the liver than by the kidneys.

PRESCRIPTIONS AND FORMULÆ.

Camphor Ice.

Table showing various formulas for the preparation of Camphor Ice. (The proportions are given in parts by weight:)

INGREDIENTS.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ol. Amygd. Exp.	16						8	8					
" " Ess.													
" Lavand flor.				¼	½								
" Verbena						½							
" Citronella...						¼							
" Ricini		12											
" Oliveæ.....			12										
" Rosmarini...	½												
" Myrciæ.....									½	½		¼	
Aqua Rosæ....	16												
Cera Alba.....	1	8	3	4	8	16	4		18	18	20	11	20
Cetaceum.....	1	6	12			8	3	1		8	10		10
Camphora.....	2	2	6	2	4	4	3	1	8	6	6	5	6
Sevum									36			22	
Sevum Benz...				16	16								
Adeps.....						24							
Stearin com...										24	24		24
Glycerin			1										

No. 1 is an English Formula, and gives a variety of Cold Cream; No. 2 is a Formula used by a Cincinnati Pharmacy; No. 3 is a modification of No. 2, by the addition of Glycerin; No. 4 is in use in Philadelphia, Pa.; No. 5 is an English Formula; No. 6 is from a Broadway, New York, Pharmacy; No. 7 is of French origin; of No. 8 the pedegree is lost; No. 9 to 13 are Formulas of the writer, and have been extensively used for both wholesale and retail trade, and will give excellent results, with perfectly sweet materials. The perfume is not arbitrary, but can be mixed to suit one's taste, but do not consider it economy to use Ol. Mirbane, for it will ruin any of the formulas.

The manipulation is easy to be understood; in the first and third formulas it is similar to that of the Cold Cream of the Pharmacopœia; in all the others, the wax is to be melted first, then the cetaceum and lard, then the camphor, and finally, when sufficiently cooled, the essential oils, and then cast into suitable moulds.—T. J. Covell, in *The Pharmacist.*

Saccharate of Iron.

E. Hoffman offers the following improved formula for this preparation, which is officinal in Germany:

℞ Solution of Ferric Chloride, sp. gr., 148.....10 parts.
Solution of White Sugar, containing fifty per cent. 8½ parts.
Solution of pure Sodium Carbonate, thirty-three and one-third per cent..36 parts.
Caustic Soda..... 5 parts.
Boiling water.....400 parts.
Powdered Sugar.....12 parts.

Mix the ferric chloride and sugar solution in a large porcelain dish, and add the solution of sodium carbonate in four or five portions, allowing the carbonic acid to escape after each addition; next add the caustic alkali, which will cause the precipitate to dissolve, and after a few minutes pour the solution into the boiling water. Wash the precipitate thus formed six times with hot water by decantation, collect it on a filter, drain, press slightly, transfer to a porcelain capsule, add the powdered sugar, and evaporate by a steam bath, till of the consistence of honey; then pour out upon flat plates and complete the dessiccation in the drying closet. Finally add enough powdered sugar to make up the weight to fifty parts, triturate with a few drops of alcohol, and dry once more.

Glycerin may be substituted for sugar

in this formula, affording a glycerite, which if made to contain ten per cent. of iron, has a handsome brown-red color and the consistence of a soft extract, and may be preserved a long time unchanged. —*American Journal of Pharmacy.*

Rapid Preparation of Mercurial Ointment.

In the *Journal de Chemie Médicale* Mr. G. Bayle assures us that a faultless mercurial ointment, corresponding to the requirements of the *Codex*, may always be obtained in about fifteen minutes by the following *modus operandi*:—Put into a mortar 100 grammes of mercurial ointment from a previous operation, and 500 grammes of mercury; with rapid trituration add gradually 30 g. of sulphuric ether, and in a few minutes the mercury will be divided into imperceptible globules; then add about 100 g. of lard, and, after several minutes of vigorous trituration, examine, in the usual way whether the extinction of the metal has been effected. If some globules remain visible, the addition of a little ether and short trituration will complete this portion of the process. The ointment is then finished by adding the requisite quantity of lard.—*Chemist and Druggist.*

Topical Applications in Otorrhœa.

M. Ménière in a clinical lecture on otorrhœa gives the following formulæ as convenient and useful in many cases. Although they cannot always be expected to exercise a curative influence, yet joined to appropriate internal remedies they are in a high degree serviceable.

In "earache" one or two leeches are to be applied behind the ear, which may afterwards be covered with a poultice sprinkled with laudanum. At the same time two or three drops of the following solution may be dropped into the external meatus:

℞ Aconitiæ, gr. i;
Aquæ, f ʒ v.—M.

This solution gives better results than laudanum, chloroform, etc., so frequently used. Should the pain be intense, general anodynes may be employed. In chronic otorrhœa the external meatus should be kept thoroughly clean by frequent injections of tepid water, and may in addition be painted once a day with the following solution:

℞ Acid. carbolic., gr. i;
Glycerine., ʒ i.—M.

This solution acts very satisfactorily in modifying the character of the secretion; it is sometimes necessary to increase the proportion of carbolic acid. A ten per cent. solution of nitrate of silver painted upon the internal meatus will often serve a similar purpose. M. Ménière frequently employs the following solution in cases of chronic discharge from the ear. It has the advantage that the patient can apply it himself;

℞ Zinci sulph., gr. iv;
Glycerin., f ʒ ii:
Aquæ, f ʒ vi.—M.

Three to six drops are allowed to fall into the ear, which has previously been thoroughly cleansed with tepid water. The head is to be retained in the inclined position from eight to twelve minutes.

The following solution may be used when great vascularity of the bottom of the ear exists, even where there is perforation of the tympanum:

℞ Plumbi acetat., gr. ss. ad i;
Aquæ, f ʒ ss.—M.

Tooth Powders.

It is of the highest importance that the basis of all tooth powders should be so free from all sharp, gritty particles that there will be no danger of abrasion to the enamel of the teeth. This fineness, of course, is to be obtained only by careful pulverization and passing the powder through a seive of fine bolting cloth, all the various materials being reduced to an equal degree of fine-

ness. When coloring matter is to be added, and this generally is some shade of pink, the finest color is obtained by washing the calcareous powder with a solution of carmine in aqua ammoniæ, and exposing the powder to the air until free from ammoniacal odor and moisture; to this prepared calcareous base the remaining powders are added, and the whole thoroughly incorporated by sifting together.

Betton's Dentifrice.

Take of—

Powdered Cuttle-fish,	
" Orris root each..	4 pounds.
" Prepared chalk..	1 "
Musk.....	8 grains.
Oil of rose and lavender (Mitcham), each.....	48 drops.
Carmine, No. 40	2 drachms.
Aqua Ammoniæ.....	5 fl. dr.
Water.....	6 fl. ounces.

Rub the carmine with the aqua ammoniæ diluted with the water, and with this solution imbue the prepared chalk and powdered cuttle-fish bone. After the moisture has all disappeared, sift the orris root perfumed with the essential oils together with the colored lime salts.

Piesse's Cuttle-Fish Powder.

Take of—

Powdered Cuttle-fish.....	½ pound.
Precipitated carbonate of lime.....	1 "
Powdered orris root... ...	½ "
Oil of lemon.....	1 ounce.
Oil of neroli.....	½ "
Carmine.....	½ drachm.
Aqua ammoniæ.....	2 fl. dr.
Water.....	1½ fluid ozs.

Proceed as in former receipt.—Thos. F. Wiegand, in the *Canadian Pharm. Jour.*

Toothache Mixture.

Dr. Deloix de Savignac (*Gaz. des Hospitaux*) recommends the following mixture. ℞ Chloroform and Sydenham's solution of opium each one half drachm. Spts. menth pip. 10 drachms. A small piece of cotton is moistened in this liquid and placed in the tooth and at the same time the gum and that side of the cheek may also be moistened with it.—*Allg. Wiener Med. Zeitung.*

Chapped Hands.

The easiest and simplest remedy is found in every storeroom. Take common starch and grind it with a knife until it is reduced to the smoothest powder. Take a clean box and fill it with starch thus prepared, so as to have it continually at hand for use. Every time hands are taken from the suds or dishwater, wipe them, and, while they are yet damp, rub a portion of starch thoroughly over them, covering the whole surface. The effect is magical. The rough smarting skin is cooled and soothed and healed, bringing and insuring the greatest degree of comfort and freedom, by this by no means insignificant trial.

For Chilblains.

According to the *Revue Médico-Photographique*, the following is a very convenient, economical and efficacious application for chilblains and "chaps:"—

Alcohol (85°).....	100 parts.
Glycerine 25	"
Carbolic acid.....1	"

Professor Hebra of Vienna recommends the following ointment to be spread on strips of linen, and wrapped at night around the parts affected with chilblains:—

Cerat. simp.

Olei olivæ .....ää	fl ℥ ij.
Glycerinæ .....fl	℥ ij.
Camphoræ tinct.....fl	℥ j. M.

Harmless Cosmetic Powders.

Mr. Hans M. Wilder (*Am. Jour. Pharm.*) announces the fact that that the apothecaries of Copenhagen have agreed on the substitution of certain harmless compounds for the numerous poisonous face-powders now commonly

used. In avoirdupois weight, the proportions of the ingredients will be about as follows; White powder: Oxide of zinc, 1 oz.; wheat starch, 9 oz.; oil of rose, 3 drops; Red powder: Carmine, 1 oz.; carbonate of magnesia, 4 oz.

Dr. Bartlett's Local Application in Pruritus and Prurigo.

Take of arrow root, finely powdered, 1 lb., (Avoirdupois); gum camphor ʒ i; hydr. oxidi rubri ℈ i.

Sift the arrow-root, then pulverize the camphor to an impalpable powder by adding a few drops of alcohol, then mix and add one scruple hydr. oxidi rubri and mix thoroughly and bottle for use.

"I keep a large quantity of this powder constantly in my office; it is my best application to prurigo and pruritus pudendi, etc., so frequently complained of by ladies. My patients sprinkle the powder on the itching surface daily, and soon report that the itching has ceased and the parts are well. Starch may be substituted for the arrow-root. Let the starch be finely pulverized and sifted. Vinegar is a good application also in such cases."—*Clayton Keith, M. D.*

Remedy for Chronic Hoarseness.

In chronic hoarseness arising from thickening of the vocal cords and adjacent membrane, the ammoniated tincture of guiacum is often a very efficacious remedy. It may be mixed with equal parts of the syrup of senega and a teaspoonful of the mixture given two or three times daily.—*Am. Practitioner.*

New Liniment for Scabies.

Dr. Clemens gives the following formula in the *Allg. Med. Central Zeit.*, Dec. 9th, 1874: Take of arsenious acid, one grain; carbonate of potash, fifteen grains; spirit of soap, three drachms; spring water, three ounces. The liniment to be rubbed twice daily on the parts affected. It is said to be efficacious, and unattended with any trouble or inconvenience. The carbonate of potash is added to the arsenious acid to promote its solubility, and to prevent the too rapid drying up of the liniment. Dr. Clemens has used this application for the last five years with the best results. Of course disinfection of the clothes is useful; but where such cannot conveniently be carried out, the liniment lying on the body serves as an attraction to the acari, which, by reaching it from the clothes, perish in it. Very little of the quantity mentioned in the prescription is necessary, and the frictions have always proved harmless as far as the digestive organs are concerned. It does not hurt the youngest child.—*Lancet*, Dec. 6, 1874.

An Insecticide.

As the best of insecticides, a German chemist recommends a tincture of nux vomica prepared with caustic solution of ammonia. Bedbugs, cockroaches, etc., are at once destroyed by it, and it is said that if a horse's harness is painted with it, the flies will avoid him! Against ants, castor oil is found an entire protection.—*Med. and Surg. Rep.*

Petroleum against Vermin.

The agricultural journals in Germany deprecate the employment of petroleum against lice in animals, and cite instances in which this use of it has been productive of unfortunate results to cattle.

A New Adhesive Plaster.

Kauvin recommends a mixture of 20 parts of mucilage of gum arabic and one part glycerine spread 3 or 4 times upon linen at sufficient intervals to allow it to thoroughly dry. This plaster is glossy, pliable, does not deteriorate after years' keeping and is considerably cheaper than English plaster or diachylon plaster.—*Pharm. Cent.-Anzeiger.*

Oil of Amber in Hiccough and Spasmodic Affections.

Oil of amber is an antispasmodic of considerable value in cases of hiccough and other spasmodic affections. In the Pharmacopœia of 1809 it was introduced, combined with ammonia as "spiritus ammoniæ succinatus." In a case of severe cramps in the limbs during pregnancy, the following was the prescription used: ℞. Olei succini, ʒ ss.; liq. potassæ, ʒ j.; tinct. camph. co., ℥ ss; aquæ menth. pip. ad ℥ vj. M. An ounce to be taken at bed-time.—*British Medical Journal.*

Suppositories of Chloral.

℞ Chloral., 1½ drachms; Ol. theobromæ, 2½ drachms; Ceræ alb., 5½ scruples; Ft. suppositor. No. vi. ℞ Ol. theobromæ, 5 drachms; Ceræ alb. 2½ drachms; Glycerinæ, 4 scruples; Chloral., 2½ drachms. Div. in suppositor. No. vi. The chloral should be dissolved in the glycerin at a gentle heat, and the cacao butter and wax added subsequently. These suppositories of chloral are recommended by Dr. Const. Paul in cancer of the uterus. His formula is—cacao butter 11 grammes, white wax 7 grammes, and chloral hydrate 6 grammes, to be divided into suppositories.—*Phil. Med. Times.*

New Antiseptic Ointment.

Professor Lister, according to the *Student's Journal and Hospital Gazette*, is at present using, with great success, an ointment composed of paraffin, 2 parts; white wax, 1 part; sweet oil of almonds, 2 parts, and boracic acid (powdered) 1 part.—*Medical and Surgical Reporter.*

New Method of Cauterizing.

Del Greco recommends, after applying nitrate of silver in the usual manner, to pass a small cylinder or pencil of polished zinc several times over the surface already whitened by the caustic. The parts immediately blacken and the cauterizing action becomes deeper.

Collodium Antiphelidicum.

The *Pharmaceutische Zeitung* says that collodium to which 2 per cent. of zinc sulphocarbolate has been added is an effective application for sunburn, freckles, and other natural skin spots: The prescription runs:

℞ Zinci sulphocarbolici.....	1.0
In pulverein terendo redactum immittee in Collodii optimi.....	45.0
Olei citri.....	1.0
Spiritus vini.....	5.0

Sæpius agita, sepone et decantha.
—*Chemist and Druggist.*

Preparation of Meat Extracts in Phthisis.

One to one and a half pounds of meat freed from bones and fat should be heated for a few minutes over a quick fire, then cut into small pieces and the juice pressed out by a presser. This is to be mixed with a thin meat broth seasoned with pepper and salt, and containing a little tapioca or rice. Care should be taken that the broth be only lukewarm in order that the juices be not coagulated. A small cupful should be taken about twice a day with a little wine, and if there be no enlargement nor fatty degeneration of the liver a teaspoonful of cod-liver oil may be added with advantage.
—*Allgemeine Med. Central-Zeitung.*

Dieuretic Wine of the Hotel Dieu.

℞ Recent squill.....	½ oz.
Digitalis	1 oz.
Juniper berries.....	5 oz.
White wine.....	6 pints.

Macerate for four days and strain, then add 1½ oz. acetate of potash and filter. Dose, a wineglassful three times a day.

Unchangeable Solution of Quinia for Hypodermic Injections.

Quinia Sulphate.....	15 grains.
Lactic Acid (concentrated).	15 grains.
Water, sufficient to make...	60 minims.
Bi-Sulphite of Sodium.....	½ grain.

When the solution of the Quinia is

perfect, add the bi-sulphite of sodium, and transfer to a well-corked vial.—*A. P. Sharp, in Proc. Am. Pharm. Ass.*, 1874.

Nitrate of Silver Pills.

Pills of argentic nitrate and bolus, or potter's clay, are frequently prescribed. These are best made by dissolving the silver nitrate first in a little water, then adding the clay and beating the whole into a soft pill mass by the addition of water. This is then easily rolled out into pills with the aid of lycopodium. If, instead of bolus, vegetable substances, as, for instance, pul. althea root, are substituted, or mucilage of acacia is added, then the pills will assume quite a different appearance. Moreover, such a method would be wholly inadmissible, since the organic matters would eventually reduce the salt to oxide or metal, and thereby render the pills inert. Only to obviate this occurrence bolus is prescribed.—Condensed from *Deutsche Am. Phar. Zeitung.*

Gargle for Sore Throat.

Dr. F. A. Burrall, of New York, says that for two years he has had experience in practice in the use of the following gargle, which is especially serviceable when used early in sore throat, when it seems, sometimes, to abort the attack.

℞ Bromo chloralum
Glycerin.....*āā* p. æq.
Tr cocci cacti.....qs. M.

Two teaspoonsful in a goblet of water used as a gargle every half hour.

Ointment for Sycosis.

Dr. S. Smith, of New London, Ct., sends us the following formula for an ointment, which he has used for several years, with unvarying success, in the cure of this intractible affection:

℞ Acid tannic..... gr. xv.
Sulphur..... gr. xij.
Aquæ rosæ..... qtt. xviij.
Adepis..... ʒ ijss.
M.

Apply a quantity the size of a pea to the affected spot every morning and night.

Liniments of Croton Oil.

℞. Olei croton tiglii..... ʒ i.
Ether sulph..... ʒ ij.
Tinct. iodine..... ʒ v.
M. To be applied two or three coats at a time, with a camel's-hair brush, over a small surface, once a week.

This is most useful for children, females, and sensitive males.

The stronger croton oil paint is given as follows:

R. Olei croton tiglii.... ʒ ij.
Ether sulph..... ʒ iv.
Tinct. iodini..... ʒ ij.
Potass. iod..... ℈i.
Iodine..... x grs.
M. Paint as before.

These croton oil paints are advocated by Dr. John W. Corson as a substitute for blistering, in all cases where a counter-irritant effect is desired. They produce less debilitating effect, and are more steady and continuous in their effects.

Tully's Powder.

Dr. L. Bartow, of Willsborough, Essex Co., N. Y., writes to us: "On page 380 of NEW REMEDIES, you give a formula for Tully's Powder which is quite different from his original powder. I have his Materia Medica, as far as published, containing *his* formula, which is as follows:—

℞ Opium, powdered..... 1 part.
Camphor, do.
Liquorice root, do.
Precip. chalk, *āā*..... 3 parts.

Morphine can be substituted for the one grain of opium, if preferred. This I have used for years as an improvement on Dover's powder.

"Your formula is nearly one-half camphor, while Tully's is less than one-third."